

FAAM facility for airborne atmospheric measurements

FLIGHT FOLDER



Flight No. B469
 Date: 25 July 2009
 Take Off: 09:26:41Z Basel
 Landing: 14:15:32Z Basel
 Flight Time: 4h 48m 51s

Campaign: CAVIAR
 Operating Area: Jungfrauoch

POB	Position	Name	Institute	Logs y/n
1	Captain	Alan Roberts	Directflight	
2	Co-pilot	Ian Ramsay-Rae	Directflight	
3	CCM	Dawn Quinn	Directflight	
4	Flight Manager	Jamie Trembath	FAAM	
5	Mission Scientist 1	Stuart Newman	Met Office	
6	Core Chem / NOx	Stephane Bauguitte	FAAM	
7	Cloud Physics	Phil Rosenberg	FAAM	
8	AVAPS	Kate Turnbull	FAAM	
9	NOx Training	Doug Anderson	FAAM	
10	SWS	Debbie O'Sullivan	Met Office	
11	ARIES/FWVS	Dave Tiddeman	Met Office	
12	MARSS	James Bowles	Met Office	
13	TAFTS	Ralph Beeby	Imperial College	Y
14	Mission Scientist 2	Chawn Harlow	Met Office	
15				
16				
17				
18				
19				

Missing Log Sheet	Reason
ViRC chat log	poor comms meant no useful ViRC during CAVIAR
Core Chemistry / TDLAS	no In Flight log except in cases of instrument problems
CVI	No log as o operator on CAVIAR
TAFTS	No log taken?

Revision	Date	Author	Comments
r0	03 Nov 2009	Doug Anderson	Initial version missing the above noted logs
r1			

VIDEO RECORDINGS:

The following avi format video recordings should be available at the BADC in core_processed/faam-video :

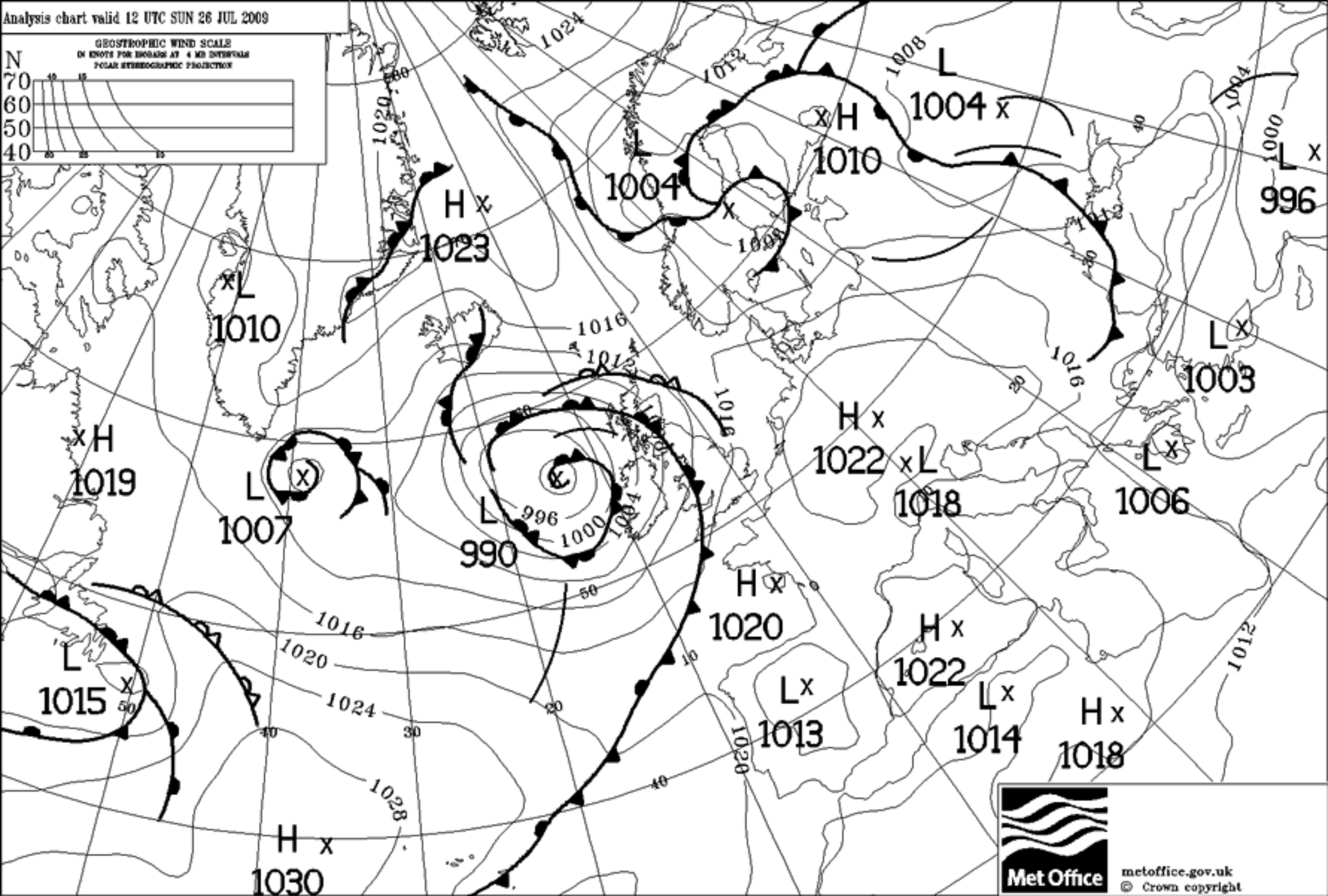
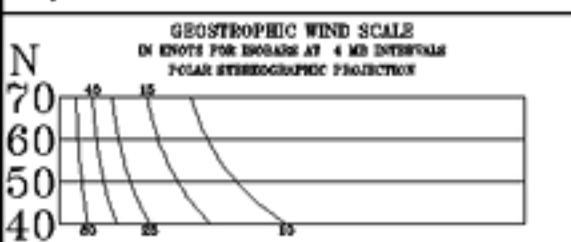
faam-video-dfc_faam_20090725_r0_b469_102926_1hz.avi
 faam-video-dfc_faam_20090725_r0_b469_092837_1hz.avi

No Digital8 video recordings were made on this flight.

FLIGHT SUMMARY

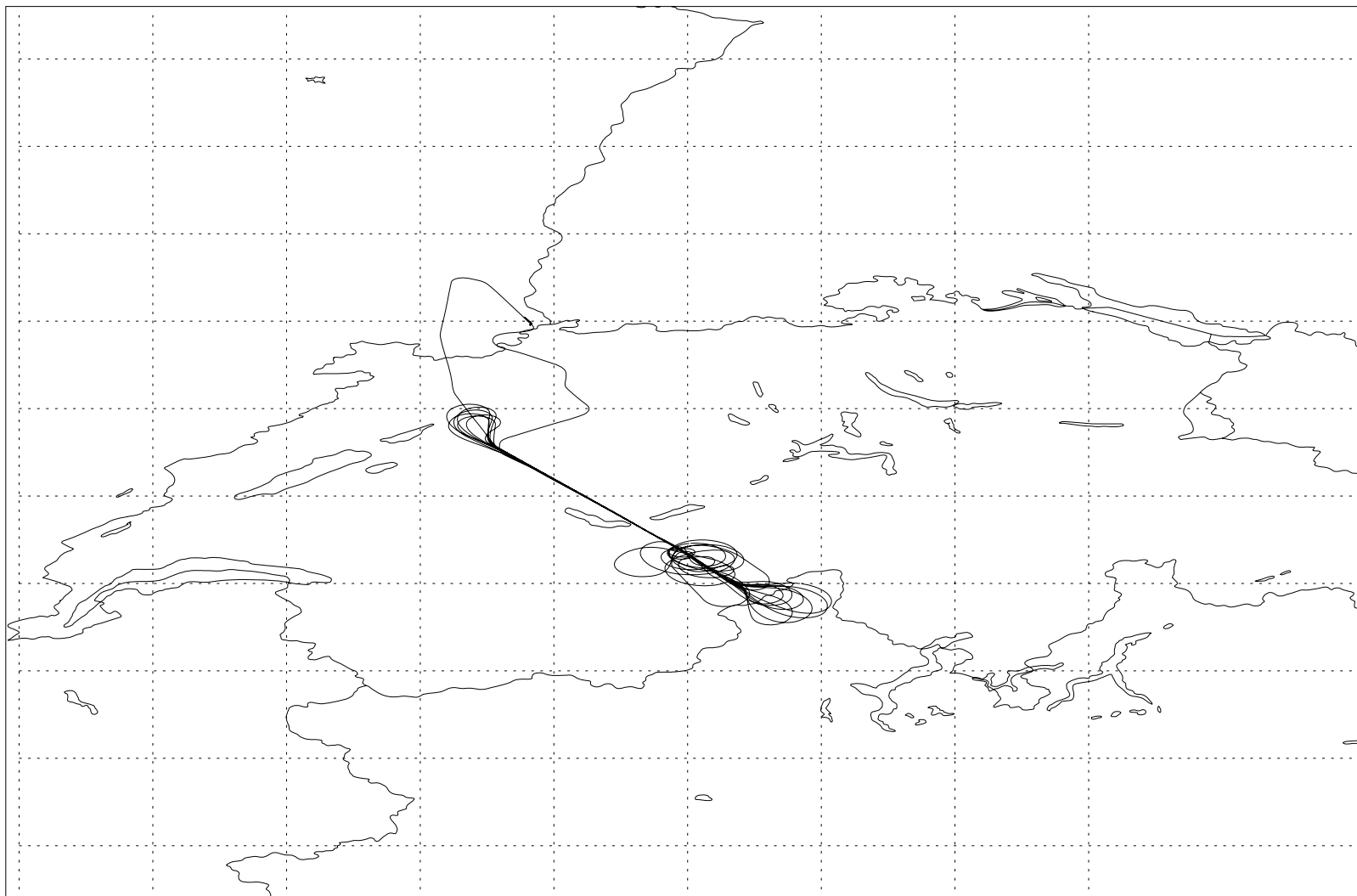
Flight No B469
Date: 25th July 2009
Project: Caviar
Location: Alps

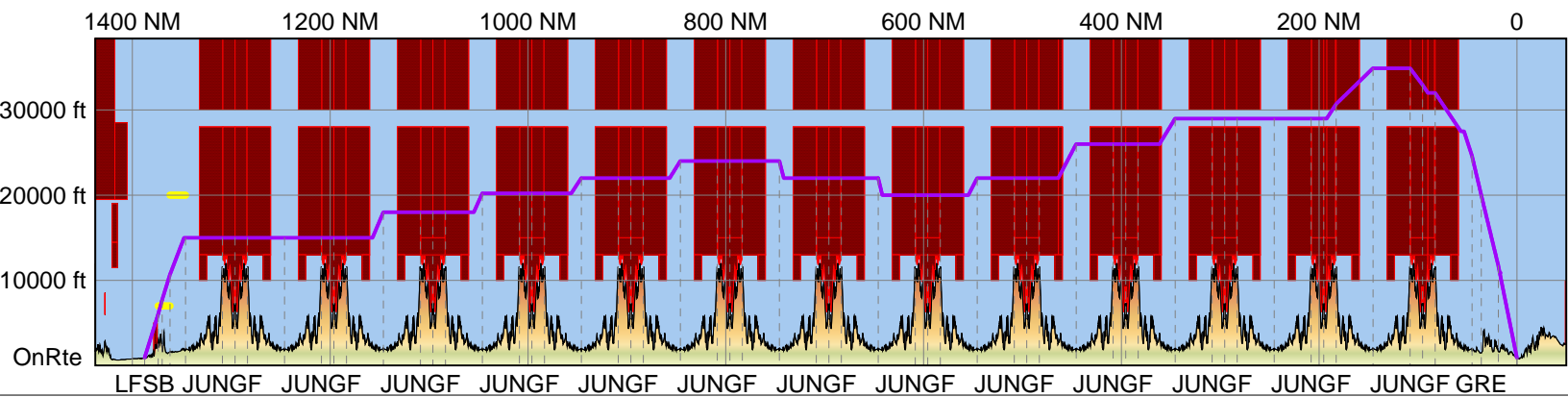
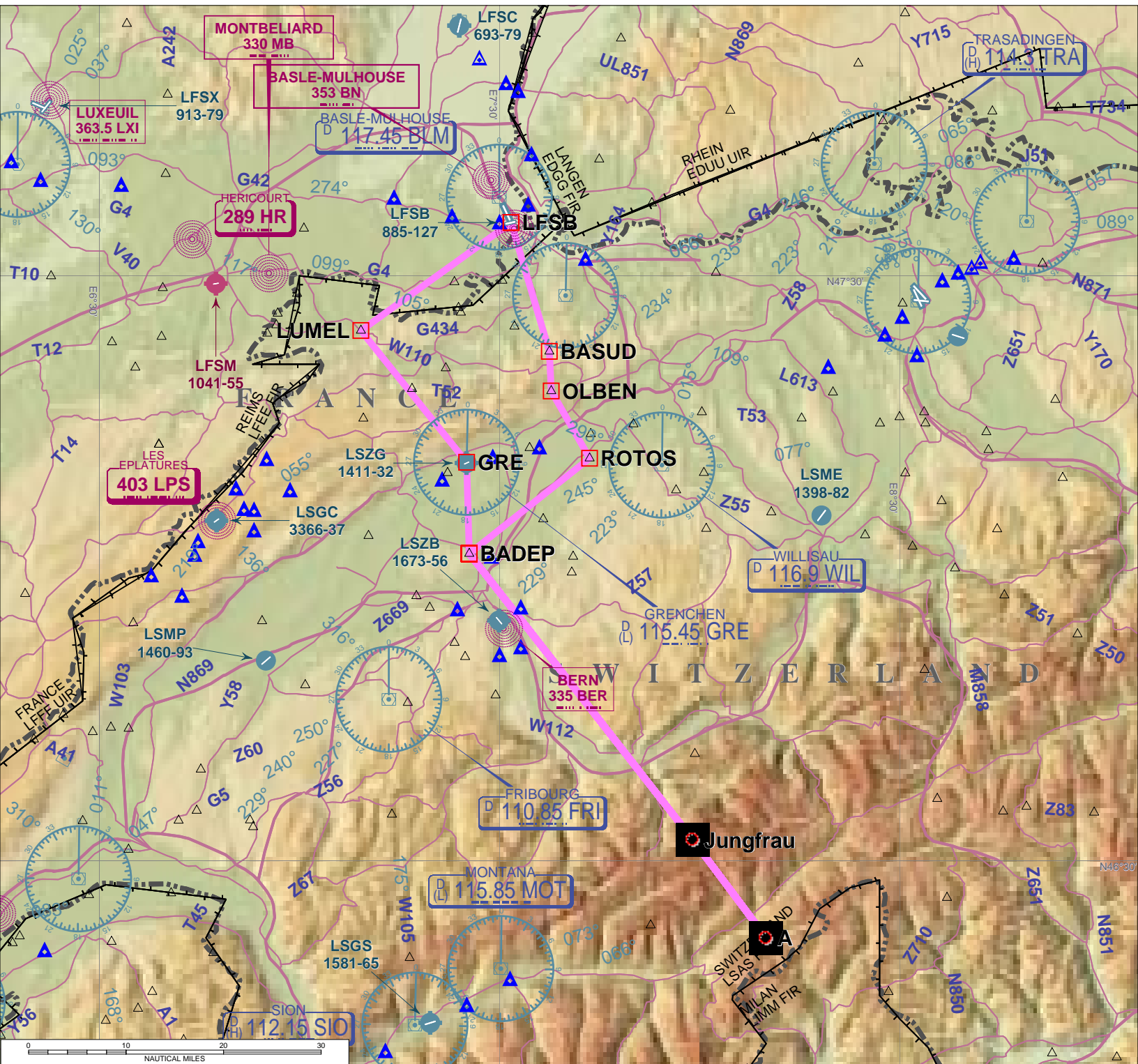
Start Time ----	End Time ----	Event -----	Height (s) -----	Hdg ---	Comments -----
091105		ASP	0.55 kft	192	open
092641		T/O	3.8 kft	225	
092641	093904	Profile 1	3.9 - 15.0 kft	219	
093905	094758	Run 1	15.0 kft	174	
094156		note	15.0 kft	142	Heiman cal prog 6 H20 Zero
094759	094904	Profile 2	15.0 - 16.0 kft	149	interrupt
095050	095251	Profile 2	16.0 - 18.0 kft	278	restart
095252	100427	Run 2	18.0 kft	314	
100428	100538	Profile 3	18.0 - 19.0 kft	314	interrupt
100616	100713	Profile 3	19.0 - 20.0 kft	322	restart & interrupt
100751	100846	Profile 3	20.1 - 21.0 kft	169	restart & interrupt
100847	101955	Run 3	21.0 kft	146	
101955	102230	Profile 4	21.0 - 24.0 kft	271	
102230	103403	Run 4	24.0 kft	318	
102449		Sonde 1	24.0 kft	318	
103403	103605	Profile 5	24.0 - 26.0 kft	348	interrupt
103633	103832	Profile 5	26.1 - 28.0 kft	217	restart
103832	105223	Run 5	28.0 kft	139	
103927		Sonde 2	28.0 kft	147	
105351	105615	Orbit 1	28.0 - 27.9 kft	211	40 degrees left
105654	105911	Orbit 2	28.1 - 27.9 kft	239	40 degrees left
110047	111439	Profile 6	28.1 - 15.1 kft	321	Spiral descent
111550	111741	Orbit 3	15.1 - 15.0 kft	312	40 degrees left
111816	112010	Orbit 4	15.1 kft	249	40 degree left
112504	113957	Run 6	15.1 kft	339	
113404		note	15.1 kft	317	Heiman cal prog 6
113957	114236	Profile 7	15.1 - 18.0 kft	234	
114236	115049	Run 7	18.0 - 18.1 kft	144	
115050	115324	Profile 8	18.1 - 21.0 kft	091	
115325	120639	Run 8	21.0 kft	290	
120640	121034	Profile 9	21.0 - 25.0 kft	323	
121035	121922	Run 9	25.0 - 25.1 kft	134	
121313		Sonde 3	25.0 kft	145	
121923	122403	Profile 10	25.1 - 30.0 kft	070	
122403	123656	Run 10	30.0 - 30.1 kft	312	
122839		Sonde 4	30.0 kft	311	
123148		Sonde 5	30.0 kft	313	
123657	125314	Profile 11	30.1 - 35.0 kft	348	
125216		Sonde 6	34.9 kft	337	
125315	130351	Run 11.1	35.1 - 35.0 kft	310	
125518		Sonde 7	35.0 kft	315	
130744	131428	Run 11.2	35.1 - 35.0 kft	154	
132347	134109	Profile 12	35.0 - 15.0 kft	314	Spiral descent
132922		note	28.7 kft	254	atc 1,500ft min-1
133235		note	23.7 kft	354	1000 ft min-1
134528	135845	Run 12	15.1 - 15.0 kft	299	
135523		note	15.1 kft	317	Heiman cal prog 6
141532		Land	0.55 kft	127	



B469 06:28:02–14:21:17

GLNG_PARA0581,GLAT_PARA0580





Sortie brief for FAAM

CAVIAR detachment 2009

Flight no:	B469
Proposed date:	Saturday 25 July 2009
Prepared by:	Stuart Newman
Version no.:	1.0, prepared 24 July 2009 1045L (0845Z)

Aim:	To sample intensively the water vapour structure of the atmosphere, and measure the radiative signature of the water vapour continuum.
Airfield:	Basel
Flight location:	Track between Payerne and Jungfrauoch high altitude research station.
Weather conditions required:	Clear sky (or very nearly clear sky, preferably $\frac{1}{8}$ cloud or less) from surface to space.
Dropsondes:	7 required. To be released from high altitudes only (FL265 and above).

Further sortie details

Coordinates: aim to fly straight and level runs between fixed coordinates

BADEP = 47° 1.6' N, 7° 25.5' E

(Jungfrauoch = 46° 32.9' N, 7° 59.1' E)

A = 46° 22.0' N, 8° 10.0' E

The runs are of approx. 10 mins duration, may be slightly longer at the lowest altitudes.

Orientation: Track approx. 142°T and reciprocal over Jungfrauoch and neighbouring glacier.

Radiometers: ARIES and TAFTS to coordinate their upward and downward views during the straight and level runs.

Note that the following flight altitudes are examples only, and in practice these will be chosen by the mission scientist.

Sortie profile

No.	Item	Time	Cumulative time
1	Take off from Basel at 0930Z (1130L)		
2	Transit to arrive at BADEP at FL150	00:15	00:15
3	Perform straight and level run (SLR) from BADEP to A at FL150	00:15	00:30
4	Climbing turn to FL180, rate of climb 1000 ft/min or less	00:05	00:35
5	Perform SLR (A to BADEP) at FL180	00:10	00:45
6	Climbing turn to FL210, rate of climb 1000 ft/min or less	00:05	00:50
7	Perform SLR (BADEP to A) at FL210	00:10	01:00
8	Climbing turn to FL240, rate of climb 1000 ft/min or less	00:05	01:05
9	Perform SLR (A to BADEP) at FL240, drop one sonde	00:10	01:15
10	Climbing turn to FL280, rate of climb 1000 ft/min or less	00:05	01:20
11	Perform SLR (BADEP to A) at FL280, drop one sonde	00:10	01:30
12	Reposition from A to the Jungfrauoch	00:05	01:35
13	Perform two orbits with angle of bank greater than SZA	00:10	01:45
14	Perform spiral descent from FL280 to FL150 over the Jungfrauoch at 1000 ft/min	00:15	02:00
15	Perform two orbits with angle of bank greater than SZA	00:10	02:10
16	Reposition from Jungfrauoch to A	00:05	02:15
17	Perform SLR (A to BADEP) at FL150	00:15	02:30
18	Climbing turn to FL180, rate of climb 1000 ft/min or less	00:05	02:35
19	Perform SLR (BADEP to A) at FL180	00:10	02:45
20	Climbing turn to FL220, rate of climb 1000 ft/min or less	00:05	02:50
21	Perform SLR (A to BADEP) at FL220	00:10	03:00
22	Climbing turn to FL260, rate of climb 1000 ft/min or less	00:05	03:05
23	Perform SLR (BADEP to A) at FL260, drop one sonde	00:10	03:15
24	Climbing turn to FL300, rate of climb 1000 ft/min or less	00:05	03:20
25	Perform SLR (A to BADEP) at FL300, drop two sondes	00:10	03:30
26	Straight climb (BADEP to A) to FL350, rate of climb 1000 ft/min or less	00:10	03:40
27	Perform SLR (A to BADEP) at FL350, drop two sondes	00:10	03:50
28	Reposition from BADEP to JFJ	00:10	04:00
29	Perform spiral descent from FL350 to FL150 over the Jungfrauoch at 1000 ft/min	00:20	04:20
30	Reposition from Jungfrauoch to A	00:05	04:25
31	Perform SLR (A to BADEP) at FL150	00:15	04:35
32	Return to Basel	00:15	04:50

Mission scientist debrief for CAVIAR flight B469 on 25 July 2009
S. M. Newman

Debrief

This flight was planned to investigate the radiative signature of the water vapour continuum, in coordination with solar-tracking FTS measurements performed by NPL at the Jungfraujoch high-altitude observatory.

Straight and level runs were flown between the airway point BADEP and a point A on a track overflying the Jungfraujoch. During the transit from Basel multi-level cumulus clouds were encountered between 5-11,000 feet. The first run occurred at FL150, with breaks in the cloud field but approximately 6 octas Cu/Sc below this altitude. Unfortunately for the NPL measurements on the Jungfraujoch the cloud tops appeared to be around 11-12,000 feet so interfering with their measurements. Above the inversion the air was relatively dry, with good clear sky conditions above.

Further straight and level runs were performed at FL180, FL210, FL240 and FL280, with sondes dropped at the latter two levels. Two orbits of 40° to characterise any stratospheric aerosol scattering were followed by a spiral descent over the Jungfraujoch terminating at FL150, and two further orbits at 40°. Cloud was still affecting NPL views of the sun at this time, with 6-7 octas Cu/Sc below FL150.

Runs at FL150, FL180, FL210, FL250, FL300 and FL350 were carried out in good clear sky conditions; there appeared to be cirrus towards the horizon but this did not seem to be encroaching on the operating area. The cloud cover was maintained over the mountains at approximately 6 oktas, but the Jungfraujoch still seemed to be cloud affected (later confirmed by the NPL scientists). Dropsondes were released at FL250 and above.

A spiral descent over the Jungfraujoch from FL350 to FL150 (now with wisps of encroaching cirrus above) was followed by a final run at FL150 before the transit back to Basel. Thicker cirrus to the west was apparent during the final run. The flight time was 4:49.

Summary

With good clear sky conditions above the mountains this will be a useful water vapour continuum flight for ARIES and TAFTS. The persistent cloud cover over the Jungfraujoch renders this a poor day for NPL's solar tracking measurements.

Instrument issues

None significant, apart from restricted measurements due to cloud for NPL at the observatory.

Aircraft Scientist's Log

S.M. NEWMAN

Flight No **B469**.....

Date **25/7/2009**.....

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
092641	TAKE-OFF				
0931		5900ft			Passing through cloud (Cu, multi-level)
0934		9400 ft			None cloud we're passing through
		10400 ft			Passing through tops
	R1	FL150			Above clouds, clear view of mountains
0944	"	"	144	46°36, 7°48	Cu/Sc below, but clear above + clear view of mountains
094630	"	"	146	46°39, 8°0	T -8.3, Td -33.3°C (dry)
094750	"	"	149	46°21, 8°6	End of run (A), fairly clear in patches below
095252	R2	FL180	314	46°24, 8°6	A-BADEP, still very dry air (-13, -41 Td)
100428	end R2	"			Clear above throughout run
100844	R3	FL210	145	47°0, 7°24	T -21.4, Td -43.6°C
102230	R4	FL240	318	46°24, 8°6	T -27.4, Td -40.3 (slightly moister)
					Clear above, 6/8 Sc/Cu below
102449					Dropsonde #1 (JFJ)
103403	end run	FL240↑		47°6, 7°24	Conditions still excellent above cloud top, good visibility
103832	R5	FL280	142	47°0, 7°24	T -37.9, Td -48.0°C
103928					Dropsonde #2
104130	"	"	146	46°42, 7°0	Turbulent at this altitude
1048		"			Turning (short run with the wind)
105340		FL280			Orbits ~40°
110047	P6	FL280 ↓			
110951	"	F192		46°24, 8°0	JFJ observatory appears to be covered in cloud, still very clear above
111439	end P6	F150			Cloud over peaks below us
111552					Orbits ~40°
1120					Avoidance air traffic prior to FL150 run

Aircraft Scientist's Log

 Flight No **B 469**
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 Date **28/7/2009**

 Page **2** of

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
112502	R6	FL150	334	46°18, 8°6	T - 5.8, Td - 31.6°C
113030	"	"	318	46°36, 7°48	6 to 7 oktas Cu/Sc below, clear above
113957	end R6	FL150			(end in turn) - profile climb to FL180 Extensive Sc below, clear above
114236	R7	FL180	145	46°54, 7°30	T - 13.8, Td - 40.0°C
115050	end R7	"		46°24, 8°6	Into profile 8. Scattered Cu/Sc below
	R8	FL210		46°18, 8°6	Mountain tops still shrouded in cloud T - 19°C, Td - 37°C
120640	end R8/p9	FL210 ↑			
121033	R9	FL250	132	47°0, 7°18	BADEP to A
121313	"	"			Dropsonde #3 clear of airway
121707	"	"	147	46°30, 8°0	T - 27.4, Td - 47.9°C
121923	end R9 / P10	FL250 ↑			
122402	R10	FL300	315	46°18, 8°6	T - 39.9, Td - 49.3°C
122837	"	"			Dropsonde #4 just past Jungfranjoch
					Extensive Cu/Sc below, few wisps Cimns ahead towards horizon
123148					Dropsonde #5 towards/approach airway
123657	end R10 / P11	FL300 ↑		47°0, 7°24	6 to 7 oktas Cu/Sc below, clear above
124413		FL336		46°42, 7°48	Passed through mist layer, seems to be associated with cimns on horizon
1250		FL345			T - 51.4, Td - 56.9, elevated ozone, Stratospheric air?
125216					Dropsonde #6 near A
125315	R11.1	FL350	311	46°24, 8°0	
125517					Dropsonde #7 near Jungfranjoch
130230	"	"	312	46°34, 7°30	T - 52.7, Td - 58.8 (near BADEP)
130744	R11.2	FL350	142	47°0, 7°18	T - 52.7, Td - 58.8 Ci ahead + starboard towards horizon
131428	end R11.2	"			3 to 4 oktas below, clear above
132347	P12	FL350 ↓			Spiral descent over Jungfranjoch

Aircraft Scientist's Log

Flight No **B.469**.....

Date 25/7/09

Page ...3 of

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[illegible]

Cloud Physics Flight Log B468

Date:25/07/09	Operator:PDR	DRS Time:0	DAU1 Time:0	DAU2 Time:0	AUX1 Time:0	AUX2 Time:0
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DAU2 Disk space? 1015 MB

	CDP		PCASP SPP-200		CIP-100		2DC		SID2			
Operated?	Y		Y		Y		Y		Y			
Pre-flight checks	Ref V:	4.16	Vref (>7V):	7.5	El #1:	2.05	El#1 V (>1):	2.0	Comms?:	Y		
	Data TX?	Y	Sample flow	1.17	El #32:	3.57	El#32 V (>1):	1.5				
			Sheath flow	13.8	El #64:	1.92						
			Spectra ok?	Y	Laser current	73.3						

Just after take-off	Are SAMPLE and RECORD buttons on PADS both green?	Y	Are all heaters on? (Check ammeters and CIP dummy box heater switch).	
	Are all PADS instruments enabled and updating?	Y		

NOTE that CTRL+T will insert the current time where the cursor is as long as the cursor is a cursor and not a selected box.

GMT	Height	CDP		PCASP SPP-200		CIP-100		2DC		Habit	SID2	Comments
		#/cc	MVD	#/cc	MVD	#/cc	Mean R	#/L	Max R		Counts/s	
												KT made adjustments to SID2 pre flight in an attempt to fix the noise problems. Differences seem minimal but it will be powered today just in case.
09:13:00	ground											SID gave FIFO buffer full errors on startup but after we started taxi these stopped and the concentration dropped from saturated to 1000 counts/sec then fter 2 mins returned to saturated with FIFO full errors
09:27:00												All heaters on
												SID varying from saturated to conc ~10 per s, seems to come down from saturated when in cloud. Not sure if this is due to vibration or because it is actually detecting something.
09:46:55	FL150											Got DAT observed on hotwire for 30 s
11:26:00	FL150											Got DAT observed on hotwire for 30 s
14:07:30												PCASP Heaters off

Post flight

Instrument	Diagnostics		Brief report on instrument performance
PCASP (old)	Vref:		
	Flow:		
2DC	El#1:		
	El#32:		
PCASP SPP-200	Ref V:		
	Flow:		
CDP	Laser V:		
FFSSP	Ref V:		
SID 3	Laser V:		
Rack Equipment			Please note SEADAS disk space remaining.

[illegible][illegible]

Flight:

B469

KEY

Not Fitted

Fitted, Not Operated

Duff Data

Minor Problem

OK

Thermometers

Cabin Temperature:

Heimann:

Deiced Temp:

Non-deiced Temp:

Hygrometers

FWVS:

Buck CR2:

General Eastern:

Johnson Williams:

Nevzorov:

Total Water Probe:

Cameras

Downward Facing:

Forward Facing:

Rearward Facing:

Upward Facing:

Navigation + Aircraft

Cruciform GPS:

GIN Applanix:

INU Honeywell:

Radar Altimeter:

RVSM IAS:

RVSM Static Pressure:

XR5 GPS:

Misc Core

HORACE:

AMTG:

AVAPS:

Cabin Pressure:

Printer:

S9 Static Pressure:

Satcom C:

Satcom H (VIRC):

Turb Centre-Static:

Turb Left Right:

Turb Up-Down:

Turb Horizontal Chk:

Turb Vertical Chk:

Weather Radar:

DLUs:

DLU AERACK:

DLU BBR Lower:

DLU BBR Upper:

DLU Core Chem:

DLU Core Consoles:

DLU Port Aft:

DLU Port Fwd:

DLU Stbd Fwd:

Radiometers

Lower:

BBR (clear) Lower:

BBR (IR) Lower:

BBR (red) Lower:

Upper:

BBR (clear) Upper:

BBR (IR) Upper:

BBR (red) Upper:

ARIES:

DEIMOS:

IR Camera:

JNO2 Lower:

JNO2 Upper:

JO1D Lower:

JO1D Upper:

MARSS:

SHIMS Lower:

SHIMS Upper:

SWS:

TAFTS:

Cloud Probes

2DC:

2DP:

FFSSP:

PCASP:

PCASP SPP-200:

2DS:

ADA:

CAPS:

CCN:

CDP (fuselage):

CDP (Canister):

CIP 100 (PIP):

CIP 25 (CIP):

CPI:

CVI (Inlet):

CVI PCASP-X:

CVI Ly-A Hygro:

FSSP (UMan):

SID1:

SID2:

SID3:

Aerosol

CPC 3025A:

CPC 3786 H2O:

Filters 47mm:

Filters 90mm:

Neph - Dry:

Neph - Wet:

PSAP:

AMS:

CPC (AMS):

SMPS (AMS):

CPC 3010A (CVI):

INC:

Mini-LIDAR:

SP2:

UHSAS:

VACC:

Chemistry

CO Aerolaser 5002:

NOx TE42C:

Ozone TE49C:

Ozone TE49:

SO2 TE43C:

TDLAS (NIR) CH4:

TDLAS (NIR) CO2:

FAGE:

Formaldehyde:

NOx FAAM:

NOxy:

ORAC:

PAN:

PERCA:

Peroxide:

PTRMS:

TDLAS (1C):

WAS Bags:

WAS Bottles:

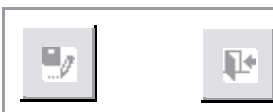
Misc Non-Core

CASI/ATM:

LIDAR (big):

LTI:

SAW Hygrometer:



Faults / Incidents Log

Flight No. B469

Date: 25/7/09

Instruments

1. RFC not operational
2. Both Lower Pyranometers reading garbage (DRS).
3. No Satcom between 09:40ish and 12:50
4. No MPDS
5. Camera program keeps crashing
6. SID2 not working again

Aircraft

- 1.
- 2.
- 3.

Satcom-H Calls

nil

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by:

Pre-Flighter's Log

Date: 25/7/04

Flight No: B 464

Pre-Flighter: *AW*

No.	✓ or x	Location	Action	Comments
1	<input checked="" type="checkbox"/>	Hangar	Collect spanners	Core Chem - 9/16" & 11/16"
Aircraft Cabin: Power-up				
2	<input checked="" type="checkbox"/>	Core Chemistry	Gases x 3 ON	
3	<input checked="" type="checkbox"/>	Cabin	All Racks Checked	
4	<input checked="" type="checkbox"/>	Core Chemistry	Instruments Checked OK	
5	<input checked="" type="checkbox"/>	Core Chemistry	CO Flows Checked OK	
6	<input checked="" type="checkbox"/>	Aft CorCon	All reqd CBs made	
7	<input checked="" type="checkbox"/>	Fore CorCon	CBs made, PCs ON	
8	<input checked="" type="checkbox"/>	HORACE	Optical Disk loaded	
9	<input checked="" type="checkbox"/>	HORACE	Recording data	
10	<input checked="" type="checkbox"/>	HORACE	DLU Status Checked	
11	<input checked="" type="checkbox"/>	HORACE	HORACE Status Checked	
12	<input checked="" type="checkbox"/>	Satcom H	Power LED ON	
13	<input checked="" type="checkbox"/>	Nevzorov	Checked and OFF	
14	<input checked="" type="checkbox"/>	Cameras Pictures	Checked x 4 OK	
15	<input checked="" type="checkbox"/>	Video Laptop	Checked onboard	
16	<input checked="" type="checkbox"/>	FWVS	Set up & check on AUTO	MD
17	<input checked="" type="checkbox"/>	Delced Rosemount	Heater Checked then OFF	
18	<input checked="" type="checkbox"/>	Heimann	Calibration Checked	
19	<input checked="" type="checkbox"/>	TWC	Fitted & signals checked	
20	<input checked="" type="checkbox"/>	GE	Balance checked then back to DP	
21	<input checked="" type="checkbox"/>	GPS (XR5M)	Checked	
22	<input checked="" type="checkbox"/>	Satcom C	Checked	
23	<input checked="" type="checkbox"/>	Miss. Sci Laptop	Checked Onboard	In cockpit
24	<input checked="" type="checkbox"/>	CNC	Butanol filled	
25	<input checked="" type="checkbox"/>	Dry Neph	Power up & Zero Cal	
26	<input checked="" type="checkbox"/>	PSAP	Pre-flight log actions complete	
27	<input checked="" type="checkbox"/>	CGPS	CBs and PC ON	ats
28	<input checked="" type="checkbox"/>	3786 CPC	DI Checked / Topped up	

No.	✓ or x	Location	Action	Comments
29	<input checked="" type="checkbox"/>	CCN Water	Supply filled / Drain empty	
30	<input checked="" type="checkbox"/>	CCN SS cols A & B	Set to manual A0.2, B0.1	
31	<input checked="" type="checkbox"/>	CCN Pressure	Normally set to 650mb	
32	<input checked="" type="checkbox"/>	CCN Flow Ratios	A & B = 10 ± 0.3	
33	<input checked="" type="checkbox"/>	3786 CPC	Drained	
34	<input checked="" type="checkbox"/>	CPC Laptop	AIM Software set up	
External Checks				
35	<input checked="" type="checkbox"/>	Turb Probe	Clean if reqd, Photo taken	
36	<input checked="" type="checkbox"/>	JW	Cleaned & Checked	
37	<input checked="" type="checkbox"/>	DI Rosemount	Cleaned & Checked	
38	<input checked="" type="checkbox"/>	NDI Rosemount	Cleaned & Checked	
39	<input checked="" type="checkbox"/>	Nevzorov	Cleaned/windings checked	
40	<input checked="" type="checkbox"/>	GE	Cleaned & Checked	
41	<input checked="" type="checkbox"/>	Lower BBRs	Domes cleaned/checked	
42	<input checked="" type="checkbox"/>	WAS Bottles	No. fitted and position.	
43	<input checked="" type="checkbox"/>	Camera Windows	Cleaned	
44	<input checked="" type="checkbox"/>	Heimann	Lens checked OK	WATER UNIT STILL
45	<input checked="" type="checkbox"/>	TWC Cover	Fitted if required	
46	<input checked="" type="checkbox"/>	All other covers	Removed	
47	<input checked="" type="checkbox"/>	Pre-flight Bag	Returned to hold	** Check no butanol**
48	<input checked="" type="checkbox"/>	Tools	Check ALL in Toolkit	
49	<input checked="" type="checkbox"/>	Tools	Avalon informed	
50	<input checked="" type="checkbox"/>			
Avalon Checks				Signed
51	<input checked="" type="checkbox"/>	Upper BBRs Checked & Cleaned		
52	<input checked="" type="checkbox"/>	ICEX applied		
53	<input checked="" type="checkbox"/>	Turb Probe - Traps emptied, detail contents -		a) Nil b) 1-2 drops c) 1/4 full or more

ARIES flight log			Flight: 3469	page 1 of 2
Date: 25/07/09	Operator(s): D. TIDDEMAN	Res: 1	Gain A: 2 B: 2	
Loc./Notes: CAUIAN SOISSE				

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". View: mirror angle.

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
							CNZ
							Carior Nadir Zenith 30s
							(CH 30s, N30s, Z30s) x ∞
							CZP
							Carior Nadir Zen
							(CH 20s, Z20s) x ∞
093909	FL150	CNZ		0	71	30	Broken cu below
094812	FL150	CNZ		0	71	31	Stopped.
095254	FL180	CNZ		0	71	31	Start
100436	FL180	CNZ		0	71	30	Stop
100933	FL210	CNZ		0	71	31	Start
101810	FL210	CNZ		0	71	31	Stop
102232	FL240	CNZ		0	71	31	Start
103410	FL240	CNZ		0	71	31	Stop
103838	FL280	CNZ		0	71	31	Start
104645	FL280	CNZ		0	71	30	Stop
104918	FL280	CNZ		0	71	30	Start
105234	FL280	CNZ		0	71	31	Stop
110109	FL280	CZP		0	71	30	Start Spiral descent
	Spiral descent						
111400	FL150	CZP		0	71	31	Stop
112157	FL150	CNZ		0	71	31	Start
112322	FL150	CNZ		0	71	31	Stop
112510	FL150	CNZ		0	71	31	Start
113743	FL150	CNZ		0	70	31	Stop
114245	FL180	CNZ		0	71	31	Start
115105	FL180	CNZ		0	71	31	Stop
115537	FL210	CNZ		0	71	30	Start
120646	FL210	CNZ		0	71	30	Stop

ARIES flight log

Flight: 13469

page 2 of 2

Date: 25/07/09

Operator(s): D. TINDEN

Res: 2

Gain A: 2 **B:** 2

Loc./Notes: SCHW EIZ CAUIAVE

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". **View:** mirror angle.

[illegible]

Microwave Radiometers FLIGHT LOG		Date	25/07/09	Flight	B469	log pages
Operator(s)	JB	Campaign	CAVIAR			
Departure	Basel	Arrival	Basel			

System start MARSS

Visual pod inspection						•
Close 3 SSP circuit breakers						•
Close all MARSS circuit breakers						•
FERA on	at time					08:45
Temperature controller initial temps	Ch16	16°C	Ch	16°C	Ch18	15°C
Temperature controller set points		54°C	17	58°C	-20	40°C
MARSS CPU on	at time					08:50
Initial target temperatures	Hot	291	Cold	288		
Target heating						•
*** CHECK SCAN HEAD CLEAR ***						•
Scanning on (LMD box)	at time					Test 06:56
Scan indication	Monitor •					Visual •

Deimos

Close all Deimos circuit breakers					
Turn on Deimos CPU					
*** CHECK SCAN HEAD CLEAR ***					
Start Deimos Software				at time	
Initial target temperatures	Hot		Cold		
Target heating					
Scan indication	Monitor			Visual	
Weather	Cloud			Precip	
	Surface			Pressure	
	Other				

System functionality check

(after initial system warmup, approx 1 hour)

PC to DRS Time error	$t_{PC}=t_{DRS} +$	0	at time	09:07:00		
Brightness temps 'sensible'						•
Target temps	MARSS:	Hot	344.55	Cold	297.21	
	Deimos:	Hot		Cold		
Channel gains 'sensible'	Ch1 A (-)	Ch3 A (-)	Ch1 B (-)	Ch3 B (-)		
	Ch16 (40-44)	Ch17 (45-49)	Ch18 (40-44)	Ch19 (40-44)	Ch20 (44-48)	
	39.10	31.70	36.57	41.37	41.76	

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Power changeover

Headset on before start																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Flight #	B	Date	Operator(s)			log page	2	of	2
Time	Run id	Alt/FL	Remarks					Sys	
09:11			Scanning on Taxi.						
09:28	TO		Scattered cu approx 6000ft						
09:35	Trans		In scattered cloud						
09:46:17	R1		Cloud to mountain trans						
09:57	R2		Mountain to cloud trans						
10:15	R3		Cloud to mountain trans						
10:29	R4		Blip in 183G						
11:01	P6		Spiral decent, increase in SD's						
12:46			Feature?? Also see F.P.						
14:21:10	Taxi		Cpu time 14:21:19						

B469_SWS_SHIMS_EventLog

Time	Mode	Value	Unit	Event
08:01:29.83	---	-	-	-
08:01:29.83	---	-	-	SOFTWARE START/RESTART
08:01:29.83	---	-	-	hh:mm:ss.ff / Instr / Posn / Period / tVIS/ tNIR / Comment
08:01:29.83	---	-	-	Flight no. B469
08:01:29.83	---	-	-	-
08:01:35.08	SWS	100	-	Sample period changed from 250ms to 100ms.
08:01:39.19	USH	100	-	Sample period changed from 250ms to 100ms.
08:01:41.94	LSH	100	-	Sample period changed from 250ms to 100ms.
08:01:43.39	USH	-	5	NIR int.time changed from 5ms to 5ms.
08:01:45.68	SWS	-	5	NIR int.time changed from 5ms to 5ms.
08:01:52.43	LSH	-	5	NIR int.time changed from 5ms to 5ms.
08:01:54.79	SWS	-	-	Initialization: VIS OK NIR OK
08:01:54.89	USH	-	-	Initialization: VIS OK NIR OK
08:01:55.07	LSH	-	-	Initialization: VIS OK NIR OK
08:02:11.56	LSH	-	100	VIS int.time changed from 5ms to 100ms.
08:02:11.57	LSH	-	100	NIR int.time changed from 5ms to 100ms.
08:02:12.61	LSH	-	100	Manual scene recording started.
08:02:17.45	USH	-	100	VIS int.time changed from 5ms to 100ms.
08:02:17.45	USH	-	100	NIR int.time changed from 5ms to 100ms.
08:02:18.85	USH	-	100	Manual scene recording started.
08:02:22.30	SWS	-	40	VIS int.time changed from 5ms to 40ms.
08:02:22.31	SWS	-	40	NIR int.time changed from 5ms to 40ms.
08:02:23.29	SWS	-	40	Manual scene recording started.
08:02:27.62	---	-	-	Reset shutters.
08:02:38.48	USH	-	100	Dark measurement started.
08:02:38.49	LSH	-	100	Dark measurement started.
08:02:38.52	SWS	-	40	Dark measurement started.
08:02:39.16	SWS	-	40	Dark measurement started.
08:02:39.98	USH	-	100	Manual scene recording started.
08:02:40.08	SWS	-	-	Idling
08:02:40.14	LSH	-	100	Manual scene recording started.
08:02:44.09	SWS	-	40	Manual scene recording started.
08:02:47.18	LSH	-	100	Dark measurement started.
08:02:48.64	LSH	-	100	Manual scene recording started.
08:02:49.43	USH	-	100	Dark measurement started.
08:02:50.89	USH	-	100	Manual scene recording started.
08:02:51.32	SWS	-	40	Dark measurement started.
08:02:52.17	SWS	-	40	Manual scene recording started.
08:02:55.97	LSH	-	-	Idling
08:02:55.98	USH	-	-	Idling
08:02:56.00	SWS	-	-	Idling
08:03:00.60	SWS	-	-	Telescope motor initialised.
08:03:06.52	SWS	-	-	Telescope disabled.
08:03:17.39	SWS	-	-	Telescope motor initialised.
08:03:37.12	SWS	0.0	-	Telescope sent to -45.000
08:03:41.00	SWS	-44.6	-	Telescope at scan limit - going to 45.0
08:03:48.82	SWS	45.0	-	Telescope at scan limit - going to -45.0
08:03:53.08	SWS	-2.0	-	Telescope stopped.
08:03:58.98	SWS	-2.1	-	Telescope sent to -6.000
08:04:11.41	SWS	-6.0	-	Telescope sent to 0.000
08:55:10.02	---	-	-	Reset shutters.
08:55:15.79	LSH	-	100	Manual scene recording started.
08:55:17.56	USH	-	100	Manual scene recording started.
08:55:20.15	SWS	-	40	Manual scene recording started.
08:55:28.32	LSH	-	100	Dark measurement started.
08:55:29.77	LSH	-	100	Manual scene recording started.
08:55:48.88	USH	-	40	VIS int.time changed from 100ms to 40ms.
08:55:48.88	USH	-	40	NIR int.time changed from 100ms to 40ms.
08:55:51.39	USH	-	40	Dark measurement started.
08:55:52.26	USH	-	40	Manual scene recording started.
08:55:53.06	SWS	-	40	Dark measurement started.
08:55:53.95	SWS	-	40	Manual scene recording started.
08:55:54.99	LSH	-	100	Dark measurement started.
08:55:56.43	LSH	-	100	Manual scene recording started.
09:00:16.64	SWS	-	40	Dark measurement started.
09:00:17.49	SWS	-	40	Manual scene recording started.

09:00:18.75	USH	-	-	40	40	Dark measurement started.
09:00:19.64	USH	-	-	40	40	Manual scene recording started.
09:00:21.04	LSH	-	-	100	100	Dark measurement started.
09:00:22.51	LSH	-	-	100	100	Manual scene recording started.
09:09:35.10	---	-	-	-	-	Reset shutters.
09:09:38.65	SWS	-	-	40	40	Dark measurement started.
09:09:38.69	USH	-	-	40	40	Dark measurement started.
09:09:38.75	LSH	-	-	100	100	Dark measurement started.
09:09:39.50	SWS	-	-	40	40	Manual scene recording started.
09:09:39.81	USH	-	-	40	40	Manual scene recording started.
09:09:40.58	LSH	-	-	100	100	Manual scene recording started.
09:09:41.74	LSH	-	-	100	100	Dark measurement started.
09:09:41.79	SWS	-	-	40	40	Dark measurement started.
09:09:41.79	USH	-	-	40	40	Dark measurement started.
09:09:42.83	SWS	-	-	40	40	Manual scene recording started.
09:09:43.08	USH	-	-	40	40	Manual scene recording started.
09:09:43.20	LSH	-	-	100	100	Manual scene recording started.
09:09:46.30	SWS	-	-	-	-	Idling
09:09:46.31	USH	-	-	-	-	Idling
09:09:46.34	LSH	-	-	-	-	Idling
09:09:54.62	SWS	-0.0	-	-	-	Telescope sent to 90.000
09:09:55.76	SWS	90.0	-	-	-	Telescope stopped.
09:27:42.36	SWS	90.0	-	-	-	Telescope sent to -6.000
09:27:43.46	SWS	-6.0	-	-	-	Telescope stopped.
09:27:46.50	LSH	-	-	100	100	Manual scene recording started.
09:27:46.50	USH	-	-	40	40	Manual scene recording started.
09:27:46.51	SWS	-	-	40	40	Manual scene recording started.
09:27:52.19	---	-	-	-	-	Reset shutters.
09:27:55.57	USH	-	-	40	40	Dark measurement started.
09:27:55.64	LSH	-	-	100	100	Dark measurement started.
09:27:55.70	SWS	-	-	40	40	Dark measurement started.
09:27:56.42	USH	-	-	40	40	Manual scene recording started.
09:27:56.85	SWS	-	-	40	40	Manual scene recording started.
09:27:57.26	LSH	-	-	100	100	Manual scene recording started.
09:27:58.45	LSH	-	-	100	100	Dark measurement started.
09:27:58.48	SWS	-	-	40	40	Dark measurement started.
09:27:58.48	USH	-	-	40	40	Dark measurement started.
09:27:58.78	LSH	-	-	100	100	Dark measurement started.
09:27:59.50	SWS	-	-	40	40	Manual scene recording started.
09:27:59.73	USH	-	-	40	40	Manual scene recording started.
09:28:00.52	LSH	-	-	-	-	Idling
09:28:02.46	LSH	-	-	100	100	Manual scene recording started.
09:28:54.90	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:28:56.85	SWS	-	-	40	40	Dark measurement started.
09:28:57.74	SWS	-	-	40	40	Manual scene recording started.
09:28:59.65	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:29:01.37	SWS	-	-	20	-	VIS int.time changed from 40ms to 20ms.
09:29:01.38	SWS	-	-	-	20	NIR int.time changed from 40ms to 20ms.
09:29:03.09	SWS	-	-	20	20	Dark measurement started.
09:29:03.79	SWS	-	-	20	20	Manual scene recording started.
09:29:04.86	SWS	-	-	20	20	Dark measurement started.
09:29:05.51	SWS	-	-	20	20	Manual scene recording started.
09:29:20.54	---	-	-	-	-	Reset shutters.
09:29:25.94	SWS	-	-	20	20	Dark measurement started.
09:29:25.94	USH	-	-	40	40	Dark measurement started.
09:29:26.01	LSH	-	-	100	100	Dark measurement started.
09:29:26.58	SWS	-	-	20	20	Manual scene recording started.
09:29:27.06	USH	-	-	40	40	Manual scene recording started.
09:29:27.79	USH	-	-	40	40	Dark measurement started.
09:29:27.86	SWS	-	-	20	20	Dark measurement started.
09:29:27.91	LSH	-	-	100	100	Manual scene recording started.
09:29:28.64	USH	-	-	40	40	Manual scene recording started.
09:29:28.65	SWS	-	-	20	20	Manual scene recording started.
09:34:12.72	USH	-	-	40	40	Dark measurement started.
09:34:12.75	SWS	-	-	20	20	Dark measurement started.
09:34:12.77	LSH	-	-	100	100	Dark measurement started.
09:34:13.58	SWS	-	-	20	20	Manual scene recording started.
09:34:13.61	USH	-	-	40	40	Manual scene recording started.
09:34:14.60	LSH	-	-	100	100	Manual scene recording started.

09:36:53.41	SWS	-	-	20	20	Dark measurement started.
09:36:53.45	USH	-	-	40	40	Dark measurement started.
09:36:53.49	LSH	-	-	100	100	Dark measurement started.
09:36:54.09	SWS	-	-	20	20	Manual scene recording started.
09:36:54.51	USH	-	-	40	40	Manual scene recording started.
09:36:55.35	LSH	-	-	100	100	Manual scene recording started.
09:37:17.85	LSH	-	-	100	100	Dark measurement started.
09:37:17.93	SWS	-	-	20	20	Dark measurement started.
09:37:17.96	USH	-	-	40	40	Dark measurement started.
09:37:18.82	SWS	-	-	20	20	Manual scene recording started.
09:37:19.26	USH	-	-	40	40	Manual scene recording started.
09:37:19.48	LSH	-	-	100	100	Manual scene recording started.
09:37:56.70	LSH	-	-	100	100	Dark measurement started.
09:37:56.72	SWS	-	-	20	20	Dark measurement started.
09:37:56.76	USH	-	-	40	40	Dark measurement started.
09:37:57.37	USH	-	-	40	40	Dark measurement started.
09:37:57.57	SWS	-	-	20	20	Manual scene recording started.
09:37:58.15	LSH	-	-	100	100	Manual scene recording started.
09:37:58.27	USH	-	-	-	-	Idling
09:38:13.25	USH	-	-	40	40	Manual scene recording started.
09:38:22.88	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:38:23.40	LSH	-	-	40	-	VIS int.time changed from 100ms to 40ms.
09:38:23.40	LSH	-	-	-	40	NIR int.time changed from 100ms to 40ms.
09:38:25.49	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:38:30.28	LSH	-	-	40	40	Dark measurement started.
09:38:31.13	LSH	-	-	40	40	Manual scene recording started.
09:38:39.56	SWS	-	-	20	20	Dark measurement started.
09:38:40.20	SWS	-	-	20	20	Manual scene recording started.
09:39:06.72	---	-	-	-	-	***
09:39:07.13	SWS	-6.0	-	-	-	Telescope sent to -45.000
09:39:09.02	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:39:10.51	SWS	-44.6	-	-	-	Telescope at scan limit - going to 45.0
09:39:13.36	SWS	-	-	10	-	VIS int.time changed from 20ms to 10ms.
09:39:13.37	SWS	-	-	-	10	NIR int.time changed from 20ms to 10ms.
09:39:15.81	SWS	-	-	10	10	Dark measurement started.
09:39:16.39	SWS	-	-	10	10	Manual scene recording started.
09:39:18.51	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:39:25.40	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:39:26.46	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:39:33.72	SWS	-	-	10	10	Dark measurement started.
09:39:34.28	SWS	-	-	10	10	Manual scene recording started.
09:39:34.58	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:39:42.63	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:39:50.65	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:39:52.88	SWS	-	-	20	-	VIS int.time changed from 10ms to 20ms.
09:39:52.91	SWS	-	-	-	20	NIR int.time changed from 10ms to 20ms.
09:39:55.59	SWS	-	-	20	20	Dark measurement started.
09:39:56.25	SWS	-	-	20	20	Manual scene recording started.
09:39:57.80	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:39:58.79	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:40:04.56	SWS	-	-	10	-	VIS int.time changed from 20ms to 10ms.
09:40:04.57	SWS	-	-	-	10	NIR int.time changed from 20ms to 10ms.
09:40:06.20	SWS	-	-	10	10	Dark measurement started.
09:40:06.85	SWS	-	-	10	10	Manual scene recording started.
09:40:06.86	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:40:08.05	SWS	-	-	10	10	Dark measurement started.
09:40:08.60	SWS	-	-	10	10	Manual scene recording started.
09:40:09.59	USH	-	-	40	40	Dark measurement started.
09:40:10.52	USH	-	-	40	40	Manual scene recording started.
09:40:11.66	LSH	-	-	40	40	Dark measurement started.
09:40:12.59	LSH	-	-	40	40	Manual scene recording started.
09:40:14.83	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:40:22.88	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:40:30.92	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:40:38.98	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:40:47.08	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
09:40:55.05	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0
09:41:03.07	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:41:11.05	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0

09:41:19.06	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
09:41:27.06	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0
09:41:35.19	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:41:43.20	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:41:51.23	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
09:41:59.34	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:42:07.40	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:42:12.28	SWS	9.1	-	-	-	Telescope stopped.
09:42:16.51	SWS	9.0	-	-	-	Telescope sent to -6.000
09:42:24.37	SWS	-	-	10	10	Dark measurement started.
09:42:24.94	SWS	-	-	10	10	Manual scene recording started.
09:42:29.34	SWS	-	-	40	-	VIS int.time changed from 10ms to 40ms.
09:42:29.35	SWS	-	-	-	40	NIR int.time changed from 10ms to 40ms.
09:42:31.58	SWS	-	-	40	40	Dark measurement started.
09:42:32.44	SWS	-	-	40	40	Manual scene recording started.
09:42:33.64	USH	-	-	40	40	Dark measurement started.
09:42:34.49	USH	-	-	40	40	Manual scene recording started.
09:42:36.04	LSH	-	-	40	40	Dark measurement started.
09:42:36.93	LSH	-	-	40	40	Manual scene recording started.
09:44:29.50	SWS	-6.0	-	-	-	Telescope at scan limit - going to 45.0
09:44:29.94	SWS	-4.0	-	-	-	Telescope sent to -45.000
09:44:33.94	SWS	43.9	-	-	-	Telescope at scan limit - going to -45.0
09:44:34.62	SWS	38.2	-	-	-	Telescope at scan limit - going to -45.0
09:44:35.34	SWS	29.4	-	-	-	Telescope at scan limit - going to -45.0
09:44:36.06	SWS	20.7	-	-	-	Telescope at scan limit - going to -45.0
09:44:36.80	SWS	12.1	-	-	-	Telescope at scan limit - going to -45.0
09:44:37.52	SWS	3.5	-	-	-	Telescope at scan limit - going to -45.0
09:44:38.24	SWS	-5.3	-	-	-	Telescope at scan limit - going to 45.0
09:44:38.97	SWS	-14.0	-	-	-	Telescope at scan limit - going to 45.0
09:44:39.77	SWS	-22.6	-	-	-	Telescope at scan limit - going to 45.0
09:44:40.44	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:44:40.51	SWS	-32.5	-	-	-	Telescope at scan limit - going to 45.0
09:44:41.23	SWS	-41.1	-	-	-	Telescope at scan limit - going to 45.0
09:44:41.97	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:44:47.05	SWS	-	-	40	40	Dark measurement started.
09:44:47.94	SWS	-	-	40	40	Manual scene recording started.
09:44:50.04	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:44:50.34	SWS	-	-	20	-	VIS int.time changed from 40ms to 20ms.
09:44:50.35	SWS	-	-	-	20	NIR int.time changed from 40ms to 20ms.
09:44:51.81	SWS	-	-	20	20	Dark measurement started.
09:44:52.44	SWS	-	-	20	20	Manual scene recording started.
09:44:58.08	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:45:06.07	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:45:13.98	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:45:22.00	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:45:30.05	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:45:37.95	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:45:45.42	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:45:45.94	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:45:54.02	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
09:45:57.64	---	-	-	-	-	*** between -20 and -41 deg getting saturation
and odd effects as SWS is pointing towards sun						
09:46:02.12	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
09:46:02.43	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:46:07.13	SWS	10.9	-	-	-	Telescope stopped.
09:46:12.23	SWS	10.9	-	-	-	Telescope sent to -6.000
09:46:59.94	SWS	-6.0	-	-	-	Telescope sent to -55.000
09:47:04.50	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:47:14.23	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:47:23.97	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:47:33.79	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:47:43.51	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:47:53.31	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:48:00.76	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:48:02.34	SWS	-49.1	-	-	-	Telescope stopped.
09:48:05.52	SWS	-49.1	-	-	-	Telescope sent to -6.000
09:48:17.05	---	-	-	-	-	*** profile climb (profile 2)
09:48:20.63	SWS	-	-	20	20	Dark measurement started.
09:48:21.30	SWS	-	-	20	20	Manual scene recording started.

09:48:22.27	USH	-	-	40	40	Dark measurement started.
09:48:23.13	USH	-	-	40	40	Manual scene recording started.
09:48:24.18	LSH	-	-	40	40	Dark measurement started.
09:48:25.07	LSH	-	-	40	40	Manual scene recording started.
09:52:45.40	---	-	-	-	-	Reset shutters.
09:52:48.65	LSH	-	-	40	40	Dark measurement started.
09:52:48.74	SWS	-	-	20	20	Dark measurement started.
09:52:48.78	USH	-	-	40	40	Dark measurement started.
09:52:49.51	LSH	-	-	40	40	Manual scene recording started.
09:52:49.54	SWS	-	-	20	20	Manual scene recording started.
09:52:49.95	USH	-	-	40	40	Manual scene recording started.
09:52:53.84	SWS	-6.0	-	-	-	Telescope sent to -55.000
09:52:58.43	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:53:05.30	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:53:08.23	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:53:10.02	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:53:17.87	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:53:23.10	LSH	-	-	40	40	Dark measurement started.
09:53:23.12	USH	-	-	40	40	Dark measurement started.
09:53:23.17	SWS	-	-	20	20	Dark measurement started.
09:53:23.82	SWS	-	-	20	20	Dark measurement started.
09:53:23.98	LSH	-	-	40	40	Manual scene recording started.
09:53:24.19	USH	-	-	40	40	Manual scene recording started.
09:53:24.49	SWS	-	-	-	-	Idling
09:53:26.73	SWS	-	-	20	20	Manual scene recording started.
09:53:27.68	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:53:29.51	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:53:37.41	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:53:40.25	SWS	-	-	20	20	Dark measurement started.
09:53:41.00	SWS	-	-	20	20	Manual scene recording started.
09:53:44.23	SWS	-	-	20	20	Dark measurement started.
09:53:44.92	SWS	-	-	20	20	Manual scene recording started.
09:53:45.77	SWS	-	-	20	20	Dark measurement started.
09:53:46.42	SWS	-	-	20	20	Manual scene recording started.
09:53:47.05	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
09:53:48.76	SWS	-	-	20	20	Dark measurement started.
09:53:49.41	SWS	-	-	20	20	Manual scene recording started.
09:53:49.66	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:53:50.24	SWS	-	-	20	20	Dark measurement started.
09:53:50.89	SWS	-	-	20	20	Manual scene recording started.
09:53:56.86	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:54:03.82	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:54:06.62	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:54:08.61	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:54:16.37	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:54:23.51	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:54:26.09	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:54:28.25	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:54:35.82	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:54:45.63	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
09:54:55.16	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:55:04.65	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
09:55:06.66	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:55:14.48	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
09:55:20.02	SWS	7.2	-	-	-	Telescope stopped.
09:55:38.77	SWS	7.2	-	-	-	Telescope at scan limit - going to -55.0
09:55:39.19	SWS	5.3	-	-	-	Telescope sent to -55.000
09:55:44.32	SWS	-55.1	-	-	-	Telescope at scan limit - going to 10.0
09:55:50.15	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:55:55.98	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:56:01.81	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:56:07.56	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:56:13.32	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:56:19.12	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:56:25.00	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:56:30.54	SWS	-52.4	-	-	-	Telescope stopped.
09:56:31.99	SWS	-52.4	-	-	-	Telescope sent to -55.000
09:56:32.56	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:56:36.96	---	-	-	-	-	Reset shutters.

09:56:38.34	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:56:44.13	SWS	-55.1	-	-	-	Telescope at scan limit - going to 10.0
09:56:50.00	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:56:55.78	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:57:01.61	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:57:07.41	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:57:13.25	SWS	10.0	-	-	-	Telescope at scan limit - going to -55.0
09:57:19.10	SWS	-55.0	-	-	-	Telescope at scan limit - going to 10.0
09:57:24.84	SWS	10.1	-	-	-	Telescope at scan limit - going to -55.0
09:57:30.59	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
09:57:37.52	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
09:57:44.41	SWS	-55.0	-	-	-	Telescope at scan limit - going to 25.0
09:57:51.31	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:57:51.35	SWS	25.0	-	-	-	Telescope at scan limit - going to -55.0
09:57:58.42	SWS	-55.0	-	-	-	Telescope at scan limit - going to 25.0
09:58:05.18	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:58:05.77	SWS	25.0	-	-	-	Telescope at scan limit - going to -55.0
09:58:12.40	---	-	-	-	-	*** SZA 33.63
09:58:12.69	SWS	-54.7	-	-	-	Telescope at scan limit - going to 25.0
09:58:19.46	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:58:19.56	SWS	24.2	-	-	-	Telescope at scan limit - going to -55.0
09:58:26.50	SWS	-55.0	-	-	-	Telescope at scan limit - going to 25.0
09:58:28.85	---	-	-	-	-	*** get odd effects within 10 deg of sun
09:58:33.30	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:58:33.38	SWS	24.2	-	-	-	Telescope at scan limit - going to -55.0
09:58:40.25	SWS	-54.3	-	-	-	Telescope at scan limit - going to 25.0
09:58:47.04	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:58:47.19	SWS	24.9	-	-	-	Telescope at scan limit - going to -55.0
09:58:54.55	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
09:59:01.51	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
09:59:05.27	SWS	-	-	20	20	Dark measurement started.
09:59:05.92	SWS	-	-	20	20	Manual scene recording started.
09:59:06.83	USH	-	-	40	40	Dark measurement started.
09:59:07.69	USH	-	-	40	40	Manual scene recording started.
09:59:08.43	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
09:59:08.56	LSH	-	-	40	40	Dark measurement started.
09:59:09.42	LSH	-	-	40	40	Manual scene recording started.
09:59:14.89	SWS	19.2	-	-	-	Telescope at scan limit - going to -55.0
09:59:21.85	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
09:59:28.72	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
09:59:35.66	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
09:59:42.54	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
09:59:49.50	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
09:59:56.44	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:00:03.33	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:00:10.16	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:00:16.64	SWS	-54.5	-	-	-	Telescope at scan limit - going to 20.0
10:00:23.54	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:00:30.51	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:00:37.39	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:00:44.30	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:00:51.24	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:00:57.69	SWS	-54.0	-	-	-	Telescope at scan limit - going to 20.0
10:01:04.14	SWS	19.2	-	-	-	Telescope at scan limit - going to -55.0
10:01:11.07	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:01:17.97	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:01:24.96	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:01:31.80	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:01:38.64	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:01:45.55	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:01:52.45	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:01:59.36	SWS	20.1	-	-	-	Telescope at scan limit - going to -55.0
10:02:05.76	SWS	-53.7	-	-	-	Telescope at scan limit - going to 20.0
10:02:12.71	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:02:19.53	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:02:26.44	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:02:32.86	SWS	-53.4	-	-	-	Telescope at scan limit - going to 20.0
10:02:39.69	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:02:46.60	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0

10:02:53.55	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:03:00.40	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:03:07.40	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:03:14.32	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:03:21.16	SWS	20.1	-	-	-	Telescope at scan limit - going to -55.0
10:03:27.56	SWS	-53.9	-	-	-	Telescope at scan limit - going to 20.0
10:03:29.39	---	-	-	-	-	Reset shutters.
10:03:33.48	LSH	-	-	40	40	Dark measurement started.
10:03:33.53	USH	-	-	40	40	Dark measurement started.
10:03:33.53	SWS	-	-	20	20	Dark measurement started.
10:03:33.95	USH	-	-	40	40	Dark measurement started.
10:03:34.00	SWS	19.0	-	-	-	Telescope at scan limit - going to -55.0
10:03:34.37	LSH	-	-	40	40	Manual scene recording started.
10:03:34.55	SWS	-	-	20	20	Manual scene recording started.
10:03:34.96	USH	-	-	-	-	Idling
10:03:36.65	USH	-	-	40	40	Dark measurement started.
10:03:36.71	SWS	-	-	20	20	Dark measurement started.
10:03:36.78	LSH	-	-	40	40	Dark measurement started.
10:03:37.33	LSH	-	-	40	40	Dark measurement started.
10:03:37.50	USH	-	-	-	-	Idling
10:03:37.52	SWS	-	-	20	20	Manual scene recording started.
10:03:38.21	LSH	-	-	-	-	Idling
10:03:39.48	LSH	-	-	40	40	Manual scene recording started.
10:03:39.48	USH	-	-	40	40	Manual scene recording started.
10:03:40.49	SWS	-54.4	-	-	-	Telescope at scan limit - going to 20.0
10:03:47.35	SWS	20.1	-	-	-	Telescope at scan limit - going to -55.0
10:03:54.26	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:04:01.23	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:04:08.11	SWS	-55.1	-	-	-	Telescope at scan limit - going to 20.0
10:04:15.06	SWS	20.1	-	-	-	Telescope at scan limit - going to -55.0
10:04:21.98	SWS	-55.0	-	-	-	Telescope at scan limit - going to 20.0
10:04:28.97	SWS	20.0	-	-	-	Telescope at scan limit - going to -55.0
10:04:32.92	SWS	-22.9	-	-	-	Telescope stopped.
10:04:35.71	SWS	-22.9	-	-	-	Telescope sent to -6.000
10:04:44.51	SWS	-6.0	-	-	-	Telescope sent to 0.000
10:04:48.28	---	-	-	-	-	Reset shutters.
10:04:52.86	LSH	-	-	40	40	Dark measurement started.
10:04:52.91	SWS	-	-	20	20	Dark measurement started.
10:04:52.94	USH	-	-	40	40	Dark measurement started.
10:04:53.52	SWS	-	-	20	20	Dark measurement started.
10:04:53.78	LSH	-	-	40	40	Manual scene recording started.
10:04:54.01	USH	-	-	40	40	Manual scene recording started.
10:04:54.22	SWS	-	-	-	-	Idling
10:04:56.89	LSH	-	-	40	40	Dark measurement started.
10:04:56.89	SWS	-	-	20	20	Dark measurement started.
10:04:56.96	USH	-	-	40	40	Dark measurement started.
10:04:57.77	SWS	-	-	-	-	Idling
10:04:57.84	LSH	-	-	40	40	Manual scene recording started.
10:04:58.21	USH	-	-	40	40	Manual scene recording started.
10:04:59.23	SWS	-	-	20	20	Manual scene recording started.
10:05:07.65	---	-	-	-	-	*** profile 3
10:05:49.70	---	-	-	-	-	*** FL 190 interrupt profile
10:06:57.20	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:07:01.67	SWS	-	-	20	20	Dark measurement started.
10:07:02.32	SWS	-	-	20	20	Manual scene recording started.
10:08:49.09	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
10:08:49.52	SWS	1.9	-	-	-	Telescope sent to -55.000
10:08:54.02	SWS	54.7	-	-	-	Telescope at scan limit - going to -55.0
10:08:54.73	SWS	45.7	-	-	-	Telescope at scan limit - going to -55.0
10:08:55.46	SWS	37.0	-	-	-	Telescope at scan limit - going to -55.0
10:08:56.20	SWS	28.2	-	-	-	Telescope at scan limit - going to -55.0
10:08:56.93	SWS	19.5	-	-	-	Telescope at scan limit - going to -55.0
10:08:57.68	SWS	10.5	-	-	-	Telescope at scan limit - going to -55.0
10:08:58.36	SWS	2.2	-	-	-	Telescope at scan limit - going to -55.0
10:08:59.09	SWS	-6.5	-	-	-	Telescope at scan limit - going to 55.0
10:08:59.83	SWS	-15.3	-	-	-	Telescope at scan limit - going to 55.0
10:09:00.55	SWS	-24.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:01.11	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:01.28	SWS	-32.9	-	-	-	Telescope at scan limit - going to 55.0

10:09:02.00	SWS	-41.5	-	-	-	Telescope at scan limit - going to 55.0
10:09:02.74	SWS	-50.2	-	-	-	Telescope at scan limit - going to 55.0
10:09:03.14	---	-	-	-	-	*** FL 210 run 3
10:09:03.52	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:04.82	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:13.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:09:20.83	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:23.10	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:24.31	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:32.87	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:09:40.47	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:42.69	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:44.02	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:52.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:09:57.82	SWS	-	-	20	20	Dark measurement started.
10:09:58.50	SWS	-	-	20	20	Manual scene recording started.
10:09:59.59	USH	-	-	40	40	Dark measurement started.
10:10:00.07	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:00.52	USH	-	-	40	40	Manual scene recording started.
10:10:02.27	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:10:03.38	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:04.19	LSH	-	-	40	40	Dark measurement started.
10:10:05.05	LSH	-	-	40	40	Manual scene recording started.
10:10:11.64	SWS	54.0	-	-	-	Telescope at scan limit - going to -25.0
10:10:18.62	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:10:25.46	SWS	54.0	-	-	-	Telescope at scan limit - going to -25.0
10:10:32.40	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:10:39.25	SWS	53.8	-	-	-	Telescope at scan limit - going to -25.0
10:10:46.29	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:10:53.17	SWS	54.4	-	-	-	Telescope at scan limit - going to -25.0
10:11:00.12	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:11:07.14	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:11:09.63	SWS	-	-	20	20	Dark measurement started.
10:11:10.29	SWS	-	-	20	20	Manual scene recording started.
10:11:14.13	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:11:14.91	SWS	-	-	40	-	VIS int.time changed from 20ms to 40ms.
10:11:14.92	SWS	-	-	-	40	NIR int.time changed from 20ms to 40ms.
10:11:17.08	SWS	-	-	40	40	Dark measurement started.
10:11:17.92	SWS	-	-	40	40	Manual scene recording started.
10:11:21.13	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:11:28.02	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:11:35.04	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:11:35.10	SWS	-	-	40	40	Dark measurement started.
10:11:36.07	SWS	-	-	40	40	Manual scene recording started.
10:11:36.91	USH	-	-	40	40	Dark measurement started.
10:11:37.86	USH	-	-	40	40	Manual scene recording started.
10:11:38.20	USH	-	-	40	40	Manual scene recording started.
10:11:38.48	LSH	-	-	40	40	Dark measurement started.
10:11:39.45	LSH	-	-	40	40	Manual scene recording started.
10:11:41.99	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:11:48.97	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:11:55.89	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:12:02.89	SWS	55.1	-	-	-	Telescope at scan limit - going to -25.0
10:12:09.82	SWS	-24.7	-	-	-	Telescope at scan limit - going to 55.0
10:12:16.84	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:12:23.76	SWS	-24.5	-	-	-	Telescope at scan limit - going to 55.0
10:12:30.65	SWS	54.5	-	-	-	Telescope at scan limit - going to -25.0
10:12:37.64	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:12:44.67	SWS	55.1	-	-	-	Telescope at scan limit - going to -25.0
10:12:51.52	SWS	-24.0	-	-	-	Telescope at scan limit - going to 55.0
10:12:58.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:13:05.38	SWS	-24.8	-	-	-	Telescope at scan limit - going to 55.0
10:13:12.37	SWS	55.1	-	-	-	Telescope at scan limit - going to -25.0
10:13:19.36	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:13:26.28	SWS	54.8	-	-	-	Telescope at scan limit - going to -25.0
10:13:33.27	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:13:40.27	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:13:47.26	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:13:54.25	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0

10:14:01.19	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:14:08.19	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:14:15.19	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:14:22.18	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:14:29.14	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:14:32.26	USH	-	-	40	40	Dark measurement started.
10:14:32.28	SWS	-	-	40	40	Dark measurement started.
10:14:32.35	LSH	-	-	40	40	Dark measurement started.
10:14:33.18	USH	-	-	40	40	Manual scene recording started.
10:14:33.37	SWS	-	-	40	40	Manual scene recording started.
10:14:33.55	LSH	-	-	40	40	Manual scene recording started.
10:14:36.13	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:14:43.15	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:14:50.00	SWS	54.0	-	-	-	Telescope at scan limit - going to -25.0
10:14:56.98	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:15:03.90	SWS	54.8	-	-	-	Telescope at scan limit - going to -25.0
10:15:10.91	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:15:17.80	SWS	53.8	-	-	-	Telescope at scan limit - going to -25.0
10:15:24.71	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:15:31.55	SWS	54.0	-	-	-	Telescope at scan limit - going to -25.0
10:15:38.48	SWS	-24.8	-	-	-	Telescope at scan limit - going to 55.0
10:15:45.38	SWS	54.8	-	-	-	Telescope at scan limit - going to -25.0
10:15:52.39	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:15:59.33	SWS	54.9	-	-	-	Telescope at scan limit - going to -25.0
10:16:06.42	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:16:13.38	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:16:20.36	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:16:27.33	SWS	55.2	-	-	-	Telescope at scan limit - going to -25.0
10:16:34.26	SWS	-24.9	-	-	-	Telescope at scan limit - going to 55.0
10:16:41.17	SWS	54.6	-	-	-	Telescope at scan limit - going to -25.0
10:16:48.26	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:16:55.11	SWS	53.8	-	-	-	Telescope at scan limit - going to -25.0
10:17:02.11	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:17:09.15	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:17:16.15	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:17:23.18	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:17:30.16	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:17:37.21	SWS	55.1	-	-	-	Telescope at scan limit - going to -25.0
10:17:44.12	SWS	-24.5	-	-	-	Telescope at scan limit - going to 55.0
10:17:51.14	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:17:57.02	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:17:58.11	SWS	-25.1	-	-	-	Telescope at scan limit - going to 55.0
10:18:05.05	SWS	54.9	-	-	-	Telescope at scan limit - going to -25.0
10:18:11.49	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:18:12.04	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:18:19.41	SWS	55.0	-	-	-	Telescope at scan limit - going to -25.0
10:18:26.50	SWS	-25.0	-	-	-	Telescope at scan limit - going to 55.0
10:18:33.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:18:35.51	SWS	-	-	20	-	VIS int.time changed from 40ms to 20ms.
10:18:35.52	SWS	-	-	-	20	NIR int.time changed from 40ms to 20ms.
10:18:36.81	SWS	-	-	20	20	Dark measurement started.
10:18:37.45	SWS	-	-	20	20	Manual scene recording started.
10:18:38.42	SWS	-	-	20	20	Dark measurement started.
10:18:39.13	SWS	-	-	20	20	Manual scene recording started.
10:18:41.10	LSH	-	-	40	40	Dark measurement started.
10:18:41.99	LSH	-	-	40	40	Manual scene recording started.
10:18:42.82	USH	-	-	40	40	Dark measurement started.
10:18:42.86	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
10:18:43.67	USH	-	-	40	40	Manual scene recording started.
10:18:45.79	LSH	-	-	40	40	Dark measurement started.
10:18:46.67	LSH	-	-	40	40	Manual scene recording started.
10:18:47.97	USH	-	-	40	40	Dark measurement started.
10:18:48.92	USH	-	-	40	40	Manual scene recording started.
10:18:49.65	SWS	-	-	20	20	Dark measurement started.
10:18:50.31	SWS	-	-	20	20	Manual scene recording started.
10:18:52.21	SWS	53.9	-	-	-	Telescope at scan limit - going to -55.0
10:19:02.02	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:19:11.66	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:19:21.02	SWS	-54.1	-	-	-	Telescope at scan limit - going to 55.0

10:19:30.91	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:19:40.71	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:19:50.61	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:19:59.04	SWS	-42.0	-	-	-	Telescope stopped.
10:20:09.00	SWS	-41.9	-	-	-	Telescope sent to 0.000
10:20:28.09	SWS	0.0	-	-	-	Telescope sent to -0.500
10:20:29.55	SWS	-0.5	-	-	-	Telescope sent to 0.000
10:22:34.84	SWS	-0.0	-	-	-	Telescope sent to -55.000
10:22:40.04	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:22:46.57	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:22:49.40	SWS	54.0	-	-	-	Telescope at scan limit - going to -55.0
10:22:50.27	---	-	-	-	-	*** run 4 at FL 240
10:22:51.61	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:22:59.30	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:23:05.55	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:23:09.22	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:23:11.53	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:23:19.12	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:23:25.73	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:23:28.91	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:23:31.22	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:23:38.70	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:23:44.99	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:23:48.17	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:23:50.39	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:23:57.97	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:24:04.49	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:24:07.86	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:24:10.10	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:24:17.21	SWS	-53.9	-	-	-	Telescope at scan limit - going to 55.0
10:24:23.85	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:24:27.05	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:24:29.31	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:24:36.42	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
10:24:43.00	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:24:46.25	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:24:48.42	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:24:56.05	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:25:02.59	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:25:05.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:25:08.08	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:25:15.80	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:25:22.15	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:25:25.62	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:25:27.92	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:25:35.01	SWS	-54.4	-	-	-	Telescope at scan limit - going to 55.0
10:25:41.43	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:25:44.89	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:25:54.26	SWS	-53.9	-	-	-	Telescope at scan limit - going to 55.0
10:26:04.04	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:26:06.98	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:26:13.91	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:26:23.77	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:26:26.72	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:26:33.12	SWS	-53.8	-	-	-	Telescope at scan limit - going to 55.0
10:26:39.83	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:26:42.51	SWS	54.2	-	-	-	Telescope at scan limit - going to -55.0
10:26:44.94	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:26:52.29	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:26:58.96	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:27:02.01	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:27:04.27	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:27:11.87	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:27:18.17	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:27:21.76	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:27:24.09	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:27:31.64	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:27:38.28	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:27:41.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0

10:27:43.93	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:27:51.36	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:27:57.82	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:28:00.83	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:28:10.27	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:28:16.70	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:28:20.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:28:23.07	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:28:29.95	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:28:36.37	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:28:39.31	SWS	54.1	-	-	-	Telescope at scan limit - going to -55.0
10:28:42.32	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:28:49.15	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:28:55.57	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:28:58.95	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:29:08.73	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:29:15.17	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:29:18.62	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:29:28.48	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:29:35.31	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:29:37.82	SWS	53.8	-	-	-	Telescope at scan limit - going to -55.0
10:29:40.86	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:29:47.72	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:29:54.11	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:29:57.07	SWS	53.9	-	-	-	Telescope at scan limit - going to -55.0
10:30:00.11	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:30:06.45	SWS	-53.9	-	-	-	Telescope at scan limit - going to 55.0
10:30:12.89	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:30:16.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:30:25.64	SWS	-53.8	-	-	-	Telescope at scan limit - going to 55.0
10:30:35.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:30:44.92	SWS	-53.9	-	-	-	Telescope at scan limit - going to 55.0
10:30:45.76	---	-	-	-	-	Reset shutters.
10:30:49.09	SWS	-	-	20	20	Dark measurement started.
10:30:49.09	LSH	-	-	40	40	Dark measurement started.
10:30:49.17	USH	-	-	40	40	Dark measurement started.
10:30:49.74	SWS	-	-	20	20	Manual scene recording started.
10:30:50.18	LSH	-	-	40	40	Manual scene recording started.
10:30:50.41	USH	-	-	40	40	Manual scene recording started.
10:30:51.77	SWS	-	-	20	20	Dark measurement started.
10:30:51.87	LSH	-	-	40	40	Dark measurement started.
10:30:51.89	USH	-	-	40	40	Dark measurement started.
10:30:52.50	SWS	-	-	20	20	Manual scene recording started.
10:30:52.56	USH	-	-	40	40	Dark measurement started.
10:30:52.95	LSH	-	-	40	40	Manual scene recording started.
10:30:53.57	USH	-	-	-	-	Idling
10:30:54.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:30:56.76	USH	-	-	40	40	Manual scene recording started.
10:31:03.86	SWS	-53.7	-	-	-	Telescope at scan limit - going to 55.0
10:31:13.70	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:31:23.04	SWS	-53.8	-	-	-	Telescope at scan limit - going to 55.0
10:31:29.47	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:31:32.82	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:31:42.62	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:31:49.14	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:31:52.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:32:02.40	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:32:11.81	SWS	54.7	-	-	-	Telescope at scan limit - going to -55.0
10:32:21.70	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:32:28.19	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:32:31.55	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:32:34.53	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:32:40.96	SWS	-54.3	-	-	-	Telescope at scan limit - going to 55.0
10:32:50.31	SWS	53.8	-	-	-	Telescope at scan limit - going to -55.0
10:32:53.23	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:33:00.24	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
10:33:06.81	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:33:10.21	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:33:20.07	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0

10:33:29.98	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:33:39.93	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
10:33:46.45	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:33:49.78	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
10:33:52.08	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:33:59.17	SWS	-54.3	-	-	-	Telescope at scan limit - going to 55.0
10:34:08.51	SWS	53.8	-	-	-	Telescope at scan limit - going to -55.0
10:34:09.52	SWS	47.2	-	-	-	Telescope stopped.
10:34:22.37	SWS	47.2	-	-	-	Telescope sent to 0.000
10:34:27.34	SWS	-	-	20	20	Dark measurement started.
10:34:27.40	LSH	-	-	40	40	Dark measurement started.
10:34:27.44	USH	-	-	40	40	Dark measurement started.
10:34:28.01	SWS	-	-	20	20	Manual scene recording started.
10:34:28.43	LSH	-	-	40	40	Manual scene recording started.
10:34:28.63	USH	-	-	40	40	Manual scene recording started.
10:34:49.47	---	-	-	-	-	*** p 5
10:36:03.09	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:36:08.36	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:37:13.41	---	-	-	-	-	Reset shutters.
10:37:19.28	LSH	-	-	40	40	Dark measurement started.
10:37:19.37	USH	-	-	40	40	Dark measurement started.
10:37:19.41	SWS	-	-	20	20	Dark measurement started.
10:37:20.20	LSH	-	-	40	40	Manual scene recording started.
10:37:20.37	SWS	-	-	20	20	Manual scene recording started.
10:37:20.41	USH	-	-	40	40	Manual scene recording started.
10:37:22.33	LSH	-	-	40	40	Dark measurement started.
10:37:22.37	SWS	-	-	20	20	Dark measurement started.
10:37:22.40	USH	-	-	40	40	Dark measurement started.
10:37:23.20	SWS	-	-	20	20	Manual scene recording started.
10:37:23.25	LSH	-	-	40	40	Manual scene recording started.
10:37:23.62	USH	-	-	40	40	Manual scene recording started.
10:38:41.73	SWS	-	-	20	20	Dark measurement started.
10:38:42.39	SWS	-	-	20	20	Manual scene recording started.
10:38:45.20	SWS	-	-	40	-	VIS int.time changed from 20ms to 40ms.
10:38:45.21	SWS	-	-	-	40	NIR int.time changed from 20ms to 40ms.
10:38:50.43	SWS	-	-	40	40	Dark measurement started.
10:38:51.30	SWS	-	-	40	40	Manual scene recording started.
10:38:55.24	SWS	-	-	50	-	VIS int.time changed from 40ms to 50ms.
10:38:55.25	SWS	-	-	-	50	NIR int.time changed from 40ms to 50ms.
10:38:57.01	SWS	-	-	50	50	Dark measurement started.
10:38:57.99	SWS	-	-	50	50	Manual scene recording started.
10:38:58.84	SWS	-	-	50	50	Dark measurement started.
10:38:59.79	SWS	-	-	50	50	Manual scene recording started.
10:39:24.09	---	-	-	-	-	*** run 5 - not scanning for this one to check
for high cloud and do a cal						
10:41:22.01	---	-	-	-	-	Reset shutters.
10:41:29.71	USH	-	-	40	40	Dark measurement started.
10:41:29.71	LSH	-	-	40	40	Dark measurement started.
10:41:29.77	SWS	-	-	50	50	Dark measurement started.
10:41:30.45	SWS	-	-	50	50	Dark measurement started.
10:41:30.71	USH	-	-	40	40	Manual scene recording started.
10:41:30.93	LSH	-	-	40	40	Manual scene recording started.
10:41:31.48	SWS	-	-	-	-	Idling
10:41:35.59	SWS	-	-	50	50	Manual scene recording started.
10:41:40.71	USH	-	-	40	40	Dark measurement started.
10:41:40.77	LSH	-	-	40	40	Dark measurement started.
10:41:40.84	SWS	-	-	50	50	Dark measurement started.
10:41:41.40	SWS	-	-	50	50	Dark measurement started.
10:41:41.57	USH	-	-	40	40	Manual scene recording started.
10:41:41.85	LSH	-	-	40	40	Manual scene recording started.
10:41:42.41	SWS	-	-	-	-	Idling
10:41:43.38	SWS	-	-	50	50	Manual scene recording started.
10:42:11.86	USH	-	-	40	40	Dark measurement started.
10:42:11.91	SWS	-	-	50	50	Dark measurement started.
10:42:11.96	LSH	-	-	40	40	Dark measurement started.
10:42:12.74	USH	-	-	40	40	Manual scene recording started.
10:42:13.04	SWS	-	-	50	50	Manual scene recording started.
10:42:13.16	LSH	-	-	40	40	Manual scene recording started.
10:42:36.24	LSH	-	-	40	40	Dark measurement started.

10:42:36.28	SWS	-	-	50	50	Dark measurement started.
10:42:36.31	USH	-	-	40	40	Dark measurement started.
10:42:37.14	LSH	-	-	40	40	Manual scene recording started.
10:42:37.48	SWS	-	-	50	50	Manual scene recording started.
10:42:37.60	USH	-	-	40	40	Manual scene recording started.
10:50:07.37	---	-	-	-	-	Reset shutters.
10:50:11.94	SWS	-	-	50	50	Dark measurement started.
10:50:11.96	LSH	-	-	40	40	Dark measurement started.
10:50:12.09	USH	-	-	40	40	Dark measurement started.
10:50:12.95	SWS	-	-	50	50	Manual scene recording started.
10:50:13.02	LSH	-	-	40	40	Manual scene recording started.
10:50:13.23	USH	-	-	40	40	Manual scene recording started.
10:50:14.88	USH	-	-	40	40	Dark measurement started.
10:50:14.90	LSH	-	-	40	40	Dark measurement started.
10:50:14.99	SWS	-	-	50	50	Dark measurement started.
10:50:15.77	USH	-	-	40	40	Manual scene recording started.
10:50:16.02	LSH	-	-	40	40	Manual scene recording started.
10:50:16.27	SWS	-	-	50	50	Manual scene recording started.
10:51:25.10	SWS	-	-	50	50	Dark measurement started.
10:51:26.03	SWS	-	-	50	50	Manual scene recording started.
10:51:36.55	SWS	-	-	10	-	VIS int.time changed from 50ms to 10ms.
10:51:36.56	SWS	-	-	-	10	NIR int.time changed from 50ms to 10ms.
10:51:39.00	SWS	-	-	10	10	Dark measurement started.
10:51:39.56	SWS	-	-	10	10	Manual scene recording started.
10:51:41.91	USH	-	-	40	40	Dark measurement started.
10:51:42.82	USH	-	-	40	40	Manual scene recording started.
10:51:44.17	LSH	-	-	40	40	Dark measurement started.
10:51:45.07	LSH	-	-	40	40	Manual scene recording started.
10:52:36.75	---	-	-	-	-	*** SZA 28.19
10:53:50.86	---	-	-	-	-	*** orbit 1
10:56:12.87	---	-	-	-	-	*** end of orbit heading 290 left hand orbit
10:56:18.87	SWS	-	-	40	-	VIS int.time changed from 10ms to 40ms.
10:56:18.88	SWS	-	-	-	40	NIR int.time changed from 10ms to 40ms.
10:56:19.69	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:56:22.36	SWS	-	-	40	40	Dark measurement started.
10:56:23.21	SWS	-	-	40	40	Manual scene recording started.
10:56:27.90	SWS	-	-	30	-	VIS int.time changed from 40ms to 30ms.
10:56:27.92	SWS	-	-	-	30	NIR int.time changed from 40ms to 30ms.
10:56:29.04	SWS	-	-	30	30	Dark measurement started.
10:56:29.79	SWS	-	-	30	30	Manual scene recording started.
10:56:30.64	SWS	-	-	30	30	Dark measurement started.
10:56:31.44	SWS	-	-	30	30	Manual scene recording started.
10:56:42.96	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:56:55.13	---	-	-	-	-	*** orbit 2 to the left
10:59:12.73	---	-	-	-	-	*** end of orbit (240)
10:59:22.48	SWS	-	-	30	30	Dark measurement started.
10:59:22.52	USH	-	-	40	40	Dark measurement started.
10:59:22.52	LSH	-	-	40	40	Dark measurement started.
10:59:22.96	USH	-	-	40	40	Dark measurement started.
10:59:23.16	LSH	-	-	40	40	Dark measurement started.
10:59:23.27	SWS	-	-	30	30	Manual scene recording started.
10:59:23.96	USH	-	-	-	-	Idling
10:59:24.21	LSH	-	-	-	-	Idling
10:59:25.76	LSH	-	-	40	40	Manual scene recording started.
10:59:25.76	USH	-	-	40	40	Manual scene recording started.
10:59:28.25	---	-	-	-	-	Reset shutters.
10:59:31.59	LSH	-	-	40	40	Dark measurement started.
10:59:31.63	SWS	-	-	30	30	Dark measurement started.
10:59:31.68	USH	-	-	40	40	Dark measurement started.
10:59:32.47	LSH	-	-	40	40	Manual scene recording started.
10:59:32.56	SWS	-	-	30	30	Manual scene recording started.
10:59:32.89	USH	-	-	40	40	Manual scene recording started.
10:59:43.74	SWS	-	-	40	-	VIS int.time changed from 30ms to 40ms.
10:59:43.76	SWS	-	-	-	40	NIR int.time changed from 30ms to 40ms.
10:59:46.21	SWS	-	-	40	40	Dark measurement started.
10:59:47.18	SWS	-	-	40	40	Manual scene recording started.
10:59:48.05	SWS	-	-	40	40	Dark measurement started.
10:59:48.95	SWS	-	-	40	40	Manual scene recording started.
11:01:02.61	---	-	-	-	-	*** spiral profile descent

11:01:47.99	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:02:10.88	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:05:14.35	---	-	-	-	-	Reset shutters.
11:05:17.62	LSH	-	-	40	40	Dark measurement started.
11:05:17.67	SWS	-	-	40	40	Dark measurement started.
11:05:17.71	USH	-	-	40	40	Dark measurement started.
11:05:17.91	LSH	-	-	40	40	Dark measurement started.
11:05:18.82	SWS	-	-	40	40	Manual scene recording started.
11:05:19.04	USH	-	-	40	40	Manual scene recording started.
11:05:19.21	LSH	-	-	-	-	Idling
11:05:20.78	LSH	-	-	40	40	Dark measurement started.
11:05:20.81	USH	-	-	40	40	Dark measurement started.
11:05:20.82	SWS	-	-	40	40	Dark measurement started.
11:05:21.62	LSH	-	-	-	-	Idling
11:05:21.95	USH	-	-	40	40	Manual scene recording started.
11:05:22.24	SWS	-	-	40	40	Manual scene recording started.
11:05:22.57	SWS	-	-	40	40	Manual scene recording started.
11:05:23.17	LSH	-	-	40	40	Manual scene recording started.
11:07:05.58	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:07:17.78	SWS	-	-	40	40	Dark measurement started.
11:07:18.76	SWS	-	-	40	40	Manual scene recording started.
11:07:20.75	SWS	-	-	20	-	VIS int.time changed from 40ms to 20ms.
11:07:20.76	SWS	-	-	-	20	NIR int.time changed from 40ms to 20ms.
11:07:24.76	SWS	-	-	20	20	Dark measurement started.
11:07:25.41	SWS	-	-	20	20	Manual scene recording started.
11:07:27.41	---	-	-	-	-	Reset shutters.
11:07:30.76	SWS	-	-	20	20	Dark measurement started.
11:07:30.78	USH	-	-	40	40	Dark measurement started.
11:07:30.88	LSH	-	-	40	40	Dark measurement started.
11:07:31.05	SWS	-	-	20	20	Dark measurement started.
11:07:31.82	USH	-	-	40	40	Manual scene recording started.
11:07:32.10	SWS	-	-	-	-	Idling
11:07:32.15	LSH	-	-	40	40	Manual scene recording started.
11:07:33.69	SWS	-	-	20	20	Manual scene recording started.
11:12:14.47	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:12:20.10	---	-	-	-	-	Reset shutters.
11:12:23.46	SWS	-	-	20	20	Dark measurement started.
11:12:23.47	USH	-	-	40	40	Dark measurement started.
11:12:23.48	LSH	-	-	40	40	Dark measurement started.
11:12:24.15	SWS	-	-	20	20	Manual scene recording started.
11:12:24.60	USH	-	-	40	40	Manual scene recording started.
11:12:24.86	LSH	-	-	40	40	Manual scene recording started.
11:12:25.09	SWS	-	-	20	20	Dark measurement started.
11:12:25.16	USH	-	-	40	40	Dark measurement started.
11:12:25.25	LSH	-	-	40	40	Dark measurement started.
11:12:25.76	SWS	-	-	20	20	Manual scene recording started.
11:12:26.25	USH	-	-	40	40	Manual scene recording started.
11:12:26.44	LSH	-	-	40	40	Manual scene recording started.
11:14:51.68	---	-	-	-	-	*** end of profile
11:14:57.82	SWS	-	-	30	-	VIS int.time changed from 20ms to 30ms.
11:14:57.85	SWS	-	-	-	30	NIR int.time changed from 20ms to 30ms.
11:15:00.73	SWS	-	-	30	30	Dark measurement started.
11:15:00.76	LSH	-	-	40	40	Dark measurement started.
11:15:00.81	USH	-	-	40	40	Dark measurement started.
11:15:01.41	USH	-	-	40	40	Dark measurement started.
11:15:01.49	SWS	-	-	30	30	Manual scene recording started.
11:15:01.79	LSH	-	-	40	40	Manual scene recording started.
11:15:02.32	USH	-	-	-	-	Idling
11:15:03.24	USH	-	-	40	40	Dark measurement started.
11:15:03.28	LSH	-	-	40	40	Dark measurement started.
11:15:03.39	SWS	-	-	30	30	Dark measurement started.
11:15:04.21	USH	-	-	-	-	Idling
11:15:04.35	LSH	-	-	40	40	Manual scene recording started.
11:15:04.43	SWS	-	-	30	30	Manual scene recording started.
11:15:05.18	USH	-	-	40	40	Manual scene recording started.
11:15:21.92	---	-	-	-	-	*** SZA 27.23
11:15:49.64	---	-	-	-	-	*** orbit 3 left hand
11:17:43.44	---	-	-	-	-	*** end of orbit 3
11:17:45.35	SWS	-	-	-	-	Warning: Clipping may be occurring.

11:17:47.57	SWS	-	-	30	30	Dark measurement started.
11:17:48.35	SWS	-	-	30	30	Manual scene recording started.
11:17:53.21	SWS	-	-	50	-	VIS int.time changed from 30ms to 50ms.
11:17:53.22	SWS	-	-	-	50	NIR int.time changed from 30ms to 50ms.
11:17:56.02	LSH	-	-	40	40	Dark measurement started.
11:17:56.02	SWS	-	-	50	50	Dark measurement started.
11:17:56.03	USH	-	-	40	40	Dark measurement started.
11:17:56.95	LSH	-	-	40	40	Manual scene recording started.
11:17:57.28	SWS	-	-	50	50	Manual scene recording started.
11:17:57.40	USH	-	-	40	40	Manual scene recording started.
11:18:07.22	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:18:17.28	---	-	-	-	-	*** orbit 4 left 40 deg
11:20:05.40	---	-	-	-	-	*** end of orbit 4
11:20:10.28	---	-	-	-	-	Reset shutters.
11:20:13.57	SWS	-	-	50	50	Dark measurement started.
11:20:13.61	USH	-	-	40	40	Dark measurement started.
11:20:13.62	LSH	-	-	40	40	Dark measurement started.
11:20:14.56	SWS	-	-	50	50	Manual scene recording started.
11:20:14.68	LSH	-	-	40	40	Manual scene recording started.
11:20:14.87	USH	-	-	40	40	Manual scene recording started.
11:20:16.73	SWS	-	-	50	50	Dark measurement started.
11:20:16.77	LSH	-	-	40	40	Dark measurement started.
11:20:16.78	USH	-	-	40	40	Dark measurement started.
11:20:17.21	LSH	-	-	40	40	Dark measurement started.
11:20:17.42	USH	-	-	40	40	Dark measurement started.
11:20:17.73	SWS	-	-	50	50	Manual scene recording started.
11:20:18.26	LSH	-	-	-	-	Idling
11:20:18.49	USH	-	-	-	-	Idling
11:20:21.76	LSH	-	-	40	40	Dark measurement started.
11:20:21.79	USH	-	-	40	40	Dark measurement started.
11:20:21.85	SWS	-	-	50	50	Dark measurement started.
11:20:22.62	LSH	-	-	-	-	Idling
11:20:22.85	USH	-	-	-	-	Idling
11:20:23.15	SWS	-	-	50	50	Manual scene recording started.
11:20:25.29	LSH	-	-	40	40	Manual scene recording started.
11:20:25.29	USH	-	-	40	40	Manual scene recording started.
11:25:12.34	---	-	-	-	-	*** run 6
11:25:16.53	SWS	-0.0	-	-	-	Telescope at scan limit - going to 55.0
11:25:16.98	SWS	2.0	-	-	-	Telescope sent to -55.000
11:25:17.69	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:25:21.54	SWS	53.6	-	-	-	Telescope at scan limit - going to -55.0
11:25:22.27	SWS	44.8	-	-	-	Telescope at scan limit - going to -55.0
11:25:23.04	SWS	35.9	-	-	-	Telescope at scan limit - going to -55.0
11:25:23.49	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:25:23.78	SWS	26.7	-	-	-	Telescope at scan limit - going to -55.0
11:25:24.52	SWS	18.0	-	-	-	Telescope at scan limit - going to -55.0
11:25:25.25	SWS	9.0	-	-	-	Telescope at scan limit - going to -55.0
11:25:26.01	SWS	0.1	-	-	-	Telescope at scan limit - going to -55.0
11:25:26.74	SWS	-8.9	-	-	-	Telescope at scan limit - going to 55.0
11:25:27.53	SWS	-17.9	-	-	-	Telescope at scan limit - going to 55.0
11:25:28.25	SWS	-26.9	-	-	-	Telescope at scan limit - going to 55.0
11:25:28.99	SWS	-35.7	-	-	-	Telescope at scan limit - going to 55.0
11:25:29.74	SWS	-44.8	-	-	-	Telescope at scan limit - going to 55.0
11:25:30.49	SWS	-53.8	-	-	-	Telescope at scan limit - going to 55.0
11:25:36.34	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:25:39.98	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:25:42.59	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:25:49.36	SWS	-53.7	-	-	-	Telescope at scan limit - going to 55.0
11:25:49.69	SWS	-	-	50	50	Dark measurement started.
11:25:49.80	LSH	-	-	40	40	Dark measurement started.
11:25:49.82	USH	-	-	40	40	Dark measurement started.
11:25:50.69	SWS	-	-	50	50	Manual scene recording started.
11:25:50.82	LSH	-	-	40	40	Manual scene recording started.
11:25:51.07	USH	-	-	40	40	Manual scene recording started.
11:25:55.12	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:25:58.75	SWS	54.4	-	-	-	Telescope at scan limit - going to -55.0
11:26:01.76	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:26:08.67	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:26:18.06	SWS	54.0	-	-	-	Telescope at scan limit - going to -55.0

11:26:27.43	SWS	-54.2	-	-	-	Telescope at scan limit - going to 55.0
11:26:37.04	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:26:46.56	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:26:56.52	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:27:06.08	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:27:15.55	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:27:24.94	SWS	-54.1	-	-	-	Telescope at scan limit - going to 55.0
11:27:34.41	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:27:43.91	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:27:53.32	SWS	54.3	-	-	-	Telescope at scan limit - going to -55.0
11:28:02.74	SWS	-54.7	-	-	-	Telescope at scan limit - going to 55.0
11:28:12.19	SWS	54.7	-	-	-	Telescope at scan limit - going to -55.0
11:28:21.93	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:28:31.33	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
11:28:34.34	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:28:41.19	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:28:50.68	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:29:00.19	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:29:09.87	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:29:19.81	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:29:29.71	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:29:39.40	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:29:48.87	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:29:58.36	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:30:07.81	SWS	54.7	-	-	-	Telescope at scan limit - going to -55.0
11:30:17.34	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:30:26.69	SWS	53.6	-	-	-	Telescope at scan limit - going to -55.0
11:30:36.15	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
11:30:45.63	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:30:55.07	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
11:31:04.54	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:31:13.95	SWS	-54.3	-	-	-	Telescope at scan limit - going to 55.0
11:31:23.41	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:31:32.77	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
11:31:42.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:31:51.83	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:32:01.21	SWS	54.0	-	-	-	Telescope at scan limit - going to -55.0
11:32:11.12	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:32:20.52	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
11:32:29.98	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:32:39.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:32:49.44	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:32:58.94	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:33:08.46	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:33:18.35	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:33:27.88	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:33:37.37	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:33:46.75	SWS	-54.2	-	-	-	Telescope at scan limit - going to 55.0
11:33:56.26	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:34:05.71	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:34:15.09	SWS	53.8	-	-	-	Telescope at scan limit - going to -55.0
11:34:25.03	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:34:34.40	SWS	54.1	-	-	-	Telescope at scan limit - going to -55.0
11:34:43.94	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:34:53.41	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:35:02.80	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
11:35:12.31	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:35:21.76	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0
11:35:31.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:35:41.15	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:35:50.57	SWS	54.5	-	-	-	Telescope at scan limit - going to -55.0
11:35:59.94	SWS	-54.1	-	-	-	Telescope at scan limit - going to 55.0
11:36:09.47	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:36:18.87	SWS	-54.4	-	-	-	Telescope at scan limit - going to 55.0
11:36:28.44	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:36:37.79	SWS	-53.6	-	-	-	Telescope at scan limit - going to 55.0
11:36:47.29	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:36:57.21	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:37:06.69	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0

11:37:16.07	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
11:37:25.63	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:37:35.15	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:37:41.32	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:37:44.69	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:37:46.74	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:37:54.21	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:38:00.12	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:38:03.69	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:38:05.71	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:38:13.22	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:38:19.08	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:38:22.84	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:38:24.82	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:38:32.27	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:38:38.22	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:38:41.82	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
11:38:44.51	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:38:51.29	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0
11:39:00.70	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
11:39:03.57	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:39:10.11	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:39:15.00	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:39:19.57	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0
11:39:22.89	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:39:29.04	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:39:32.95	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:39:38.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:39:43.35	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:39:47.96	SWS	-54.6	-	-	-	Telescope at scan limit - going to 55.0
11:39:50.56	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:39:57.46	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:40:03.79	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:40:04.51	SWS	-25.3	-	-	-	Telescope stopped.
11:40:12.39	SWS	-25.3	-	-	-	Telescope sent to 0.000
11:42:25.87	---	-	-	-	-	Reset shutters.
11:42:30.12	SWS	-	-	50	50	Dark measurement started.
11:42:30.17	USH	-	-	40	40	Dark measurement started.
11:42:30.21	LSH	-	-	40	40	Dark measurement started.
11:42:31.19	SWS	-	-	50	50	Manual scene recording started.
11:42:31.42	USH	-	-	40	40	Manual scene recording started.
11:42:31.61	LSH	-	-	40	40	Manual scene recording started.
11:42:32.78	SWS	-	-	50	50	Dark measurement started.
11:42:32.82	LSH	-	-	40	40	Dark measurement started.
11:42:32.83	USH	-	-	40	40	Dark measurement started.
11:42:33.28	LSH	-	-	40	40	Dark measurement started.
11:42:33.47	USH	-	-	40	40	Dark measurement started.
11:42:33.85	SWS	-	-	50	50	Manual scene recording started.
11:42:34.29	LSH	-	-	-	-	Idling
11:42:34.51	USH	-	-	-	-	Idling
11:42:40.93	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
11:42:41.36	SWS	2.0	-	-	-	Telescope sent to -55.000
11:42:46.09	SWS	52.1	-	-	-	Telescope at scan limit - going to -55.0
11:42:46.80	SWS	43.1	-	-	-	Telescope at scan limit - going to -55.0
11:42:47.20	---	-	-	-	-	*** run 7
11:42:47.54	SWS	34.1	-	-	-	Telescope at scan limit - going to -55.0
11:42:48.31	SWS	24.9	-	-	-	Telescope at scan limit - going to -55.0
11:42:49.06	SWS	16.1	-	-	-	Telescope at scan limit - going to -55.0
11:42:49.80	SWS	7.0	-	-	-	Telescope at scan limit - going to -55.0
11:42:50.55	SWS	-1.9	-	-	-	Telescope at scan limit - going to 55.0
11:42:51.30	SWS	-11.0	-	-	-	Telescope at scan limit - going to 55.0
11:42:52.09	SWS	-20.3	-	-	-	Telescope at scan limit - going to 55.0
11:42:52.83	SWS	-29.3	-	-	-	Telescope at scan limit - going to 55.0
11:42:53.57	SWS	-38.1	-	-	-	Telescope at scan limit - going to 55.0
11:42:54.32	SWS	-47.0	-	-	-	Telescope at scan limit - going to 55.0
11:42:55.06	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:43:04.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:43:14.34	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:43:23.74	SWS	54.4	-	-	-	Telescope at scan limit - going to -55.0

11:43:33.09	SWS	-53.9	-	-	-	Telescope at scan limit - going to 55.0
11:43:43.00	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:43:52.33	USH	-	-	40	40	Manual scene recording started.
11:43:52.33	LSH	-	-	40	40	Manual scene recording started.
11:43:52.37	SWS	-54.2	-	-	-	Telescope at scan limit - going to 55.0
11:43:56.30	SWS	-	-	50	50	Dark measurement started.
11:43:56.32	LSH	-	-	40	40	Dark measurement started.
11:43:56.39	USH	-	-	40	40	Dark measurement started.
11:43:57.37	SWS	-	-	50	50	Manual scene recording started.
11:43:57.55	LSH	-	-	40	40	Manual scene recording started.
11:43:57.73	USH	-	-	40	40	Manual scene recording started.
11:43:59.63	USH	-	-	40	40	Dark measurement started.
11:43:59.67	LSH	-	-	40	40	Dark measurement started.
11:43:59.73	SWS	-	-	50	50	Dark measurement started.
11:44:00.63	USH	-	-	40	40	Manual scene recording started.
11:44:00.95	LSH	-	-	40	40	Manual scene recording started.
11:44:01.22	SWS	-	-	50	50	Manual scene recording started.
11:44:01.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:44:11.40	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:44:20.94	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:44:30.37	SWS	-54.4	-	-	-	Telescope at scan limit - going to 55.0
11:44:39.79	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
11:44:49.37	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:44:58.85	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:45:08.37	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:45:17.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:45:27.46	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:45:36.89	SWS	54.7	-	-	-	Telescope at scan limit - going to -55.0
11:45:46.46	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:45:55.86	SWS	54.4	-	-	-	Telescope at scan limit - going to -55.0
11:46:05.27	SWS	-54.5	-	-	-	Telescope at scan limit - going to 55.0
11:46:14.66	SWS	54.2	-	-	-	Telescope at scan limit - going to -55.0
11:46:24.23	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:46:33.71	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:46:43.37	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:46:52.87	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:47:02.44	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:47:12.04	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:47:21.46	SWS	-54.4	-	-	-	Telescope at scan limit - going to 55.0
11:47:30.98	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:47:40.47	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:47:50.00	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:47:59.59	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:48:09.13	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:48:18.52	SWS	-53.6	-	-	-	Telescope at scan limit - going to 55.0
11:48:28.04	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:48:37.55	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:48:46.96	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
11:48:56.38	SWS	-54.5	-	-	-	Telescope at scan limit - going to 55.0
11:49:05.96	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:49:15.58	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:49:25.19	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:49:34.64	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0
11:49:44.32	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:49:53.87	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:50:03.31	SWS	54.4	-	-	-	Telescope at scan limit - going to -55.0
11:50:12.98	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:50:22.39	SWS	54.5	-	-	-	Telescope at scan limit - going to -55.0
11:50:31.97	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:50:41.52	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:50:50.99	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:50:52.65	SWS	-39.4	-	-	-	Telescope stopped.
11:51:05.80	SWS	-39.5	-	-	-	Telescope sent to 0.000
11:51:13.25	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:51:14.03	---	-	-	-	-	*** profile 8
11:51:23.78	SWS	-	-	50	50	Dark measurement started.
11:51:24.82	SWS	-	-	50	50	Manual scene recording started.
11:51:26.54	SWS	-	-	50	50	Dark measurement started.
11:51:27.62	SWS	-	-	50	50	Manual scene recording started.

11:51:28.56	SWS	-	-	50	50	Dark measurement started.
11:51:29.58	SWS	-	-	50	50	Manual scene recording started.
11:51:30.44	SWS	-	-	50	50	Dark measurement started.
11:51:31.56	SWS	-	-	50	50	Manual scene recording started.
11:51:37.44	---	-	-	-	-	Reset shutters.
11:51:41.42	SWS	-	-	50	50	Dark measurement started.
11:51:41.43	USH	-	-	40	40	Dark measurement started.
11:51:41.48	LSH	-	-	40	40	Dark measurement started.
11:51:42.48	SWS	-	-	50	50	Manual scene recording started.
11:51:42.67	USH	-	-	40	40	Manual scene recording started.
11:51:42.87	LSH	-	-	40	40	Manual scene recording started.
11:53:26.46	SWS	-0.0	-	-	-	Telescope at scan limit - going to 55.0
11:53:26.96	SWS	2.0	-	-	-	Telescope sent to -55.000
11:53:31.67	SWS	51.1	-	-	-	Telescope at scan limit - going to -55.0
11:53:32.36	SWS	42.8	-	-	-	Telescope at scan limit - going to -55.0
11:53:33.12	SWS	33.8	-	-	-	Telescope at scan limit - going to -55.0
11:53:33.92	SWS	24.6	-	-	-	Telescope at scan limit - going to -55.0
11:53:34.69	SWS	14.9	-	-	-	Telescope at scan limit - going to -55.0
11:53:35.44	SWS	5.9	-	-	-	Telescope at scan limit - going to -55.0
11:53:36.25	SWS	-2.9	-	-	-	Telescope at scan limit - going to 55.0
11:53:37.00	SWS	-12.7	-	-	-	Telescope at scan limit - going to 55.0
11:53:37.74	SWS	-21.7	-	-	-	Telescope at scan limit - going to 55.0
11:53:38.49	SWS	-30.7	-	-	-	Telescope at scan limit - going to 55.0
11:53:39.22	SWS	-39.4	-	-	-	Telescope at scan limit - going to 55.0
11:53:39.98	SWS	-48.1	-	-	-	Telescope at scan limit - going to 55.0
11:53:40.72	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:53:50.18	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0
11:53:53.85	---	-	-	-	-	*** Run 9 at FL 210
11:53:59.71	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:54:09.30	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:54:19.12	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:54:28.84	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:54:38.65	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:54:48.49	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:54:58.12	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:55:07.77	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:55:17.18	SWS	-54.3	-	-	-	Telescope at scan limit - going to 55.0
11:55:26.89	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:55:36.35	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:55:45.87	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:55:55.37	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:56:04.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:56:14.56	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:56:24.09	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:56:33.61	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0
11:56:43.11	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:56:52.61	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:57:02.08	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0
11:57:11.60	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:57:21.02	SWS	54.5	-	-	-	Telescope at scan limit - going to -55.0
11:57:30.56	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:57:39.99	SWS	54.8	-	-	-	Telescope at scan limit - going to -55.0
11:57:49.58	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:57:59.16	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:58:08.72	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:58:18.21	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:58:27.59	SWS	-54.1	-	-	-	Telescope at scan limit - going to 55.0
11:58:37.30	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:58:46.82	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:58:56.43	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:59:06.01	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:59:15.70	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
11:59:25.24	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
11:59:34.69	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
11:59:44.21	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
11:59:53.60	SWS	54.1	-	-	-	Telescope at scan limit - going to -55.0
12:00:03.22	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:00:12.86	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:00:22.31	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0

12:00:31.85	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:00:41.34	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:00:50.72	SWS	54.1	-	-	-	Telescope at scan limit - going to -55.0
12:01:00.32	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:01:09.93	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:01:19.57	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:01:29.14	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:01:38.59	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0
12:01:48.13	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:01:57.63	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:02:07.24	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:02:16.67	SWS	-54.9	-	-	-	Telescope at scan limit - going to 55.0
12:02:26.26	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:02:35.81	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:02:45.35	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:02:54.83	SWS	-54.7	-	-	-	Telescope at scan limit - going to 55.0
12:03:04.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:03:14.11	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:03:23.75	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:03:33.31	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:03:42.86	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:03:52.04	---	-	-	-	-	Reset shutters.
12:03:52.36	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:03:56.91	USH	-	-	40	40	Dark measurement started.
12:03:56.94	LSH	-	-	40	40	Dark measurement started.
12:03:56.98	SWS	-	-	50	50	Dark measurement started.
12:03:57.43	LSH	-	-	40	40	Dark measurement started.
12:03:57.65	SWS	-	-	50	50	Dark measurement started.
12:03:57.91	USH	-	-	40	40	Manual scene recording started.
12:03:58.48	LSH	-	-	-	-	Idling
12:03:58.69	SWS	-	-	-	-	Idling
12:03:59.88	LSH	-	-	40	40	Dark measurement started.
12:03:59.90	SWS	-	-	50	50	Dark measurement started.
12:04:00.00	USH	-	-	40	40	Dark measurement started.
12:04:00.55	USH	-	-	40	40	Dark measurement started.
12:04:00.76	LSH	-	-	-	-	Idling
12:04:01.24	SWS	-	-	-	-	Idling
12:04:01.63	USH	-	-	-	-	Idling
12:04:02.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:04:02.62	SWS	-	-	50	50	Manual scene recording started.
12:04:02.63	LSH	-	-	40	40	Manual scene recording started.
12:04:02.64	USH	-	-	40	40	Manual scene recording started.
12:04:11.57	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:04:21.16	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:04:30.88	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:04:40.29	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
12:04:49.96	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:04:59.58	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:05:09.11	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:05:18.69	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:05:28.27	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:05:37.72	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0
12:05:47.25	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:05:56.77	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:06:06.38	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:06:15.90	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:06:25.48	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:06:35.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:06:40.44	SWS	-4.6	-	-	-	Telescope stopped.
12:06:49.98	---	-	-	-	-	*** profile climb
12:07:06.47	SWS	-4.5	-	-	-	Telescope sent to 0.000
12:08:18.78	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:08:21.74	---	-	-	-	-	*** saturating
12:08:24.84	SWS	-	-	50	50	Dark measurement started.
12:08:25.80	SWS	-	-	50	50	Manual scene recording started.
12:08:27.17	---	-	-	-	-	Reset shutters.
12:08:30.44	---	-	-	-	-	Reset shutters.
12:08:33.75	LSH	-	-	40	40	Dark measurement started.
12:08:33.79	SWS	-	-	50	50	Dark measurement started.

12:08:33.84	USH	-	-	40	40	Dark measurement started.
12:08:34.78	LSH	-	-	40	40	Manual scene recording started.
12:08:35.10	SWS	-	-	50	50	Manual scene recording started.
12:08:35.15	USH	-	-	40	40	Manual scene recording started.
12:08:36.22	USH	-	-	40	40	Dark measurement started.
12:08:36.28	LSH	-	-	40	40	Dark measurement started.
12:08:36.31	SWS	-	-	50	50	Dark measurement started.
12:08:37.10	USH	-	-	40	40	Manual scene recording started.
12:08:37.37	LSH	-	-	40	40	Manual scene recording started.
12:08:37.66	SWS	-	-	50	50	Manual scene recording started.
12:08:38.87	LSH	-	-	40	40	Dark measurement started.
12:08:38.90	SWS	-	-	50	50	Dark measurement started.
12:08:39.03	USH	-	-	40	40	Dark measurement started.
12:08:39.87	LSH	-	-	40	40	Manual scene recording started.
12:08:40.16	SWS	-	-	50	50	Manual scene recording started.
12:08:40.25	USH	-	-	40	40	Manual scene recording started.
12:09:01.50	---	-	-	-	-	*** ok again now
12:10:36.02	SWS	-0.0	-	-	-	Telescope at scan limit - going to 55.0
12:10:36.45	SWS	2.0	-	-	-	Telescope sent to -55.000
12:10:41.32	SWS	49.8	-	-	-	Telescope at scan limit - going to -55.0
12:10:42.04	SWS	41.3	-	-	-	Telescope at scan limit - going to -55.0
12:10:42.81	SWS	32.1	-	-	-	Telescope at scan limit - going to -55.0
12:10:43.56	SWS	23.0	-	-	-	Telescope at scan limit - going to -55.0
12:10:44.31	SWS	14.1	-	-	-	Telescope at scan limit - going to -55.0
12:10:45.07	SWS	5.1	-	-	-	Telescope at scan limit - going to -55.0
12:10:45.84	SWS	-4.0	-	-	-	Telescope at scan limit - going to 55.0
12:10:46.59	SWS	-13.3	-	-	-	Telescope at scan limit - going to 55.0
12:10:47.33	SWS	-22.2	-	-	-	Telescope at scan limit - going to 55.0
12:10:48.06	SWS	-31.1	-	-	-	Telescope at scan limit - going to 55.0
12:10:48.86	SWS	-40.2	-	-	-	Telescope at scan limit - going to 55.0
12:10:49.62	SWS	-49.6	-	-	-	Telescope at scan limit - going to 55.0
12:10:50.35	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:10:59.88	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:11:09.58	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:11:19.12	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:11:28.70	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:11:38.16	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:11:47.70	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:11:57.22	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:12:06.73	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:12:16.32	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:12:25.76	SWS	-54.8	-	-	-	Telescope at scan limit - going to 55.0
12:12:35.34	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:12:44.93	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:12:54.62	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:13:04.34	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:13:13.95	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:13:23.63	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:13:33.27	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:13:42.95	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:13:52.61	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:14:02.11	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:14:11.75	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:14:21.29	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:14:31.03	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:14:40.64	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:14:50.27	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:15:00.00	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:15:09.51	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:15:19.07	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:15:28.59	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:15:38.21	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:15:47.85	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:15:57.42	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:16:06.96	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:16:11.67	---	-	-	-	-	Reset shutters.
12:16:15.77	USH	-	-	40	40	Dark measurement started.
12:16:15.78	LSH	-	-	40	40	Dark measurement started.
12:16:15.80	SWS	-	-	50	50	Dark measurement started.

12:16:16.47	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:16:16.70	USH	-	-	40	40	Manual scene recording started.
12:16:16.93	LSH	-	-	40	40	Manual scene recording started.
12:16:17.34	SWS	-	-	50	50	Manual scene recording started.
12:16:18.96	LSH	-	-	40	40	Dark measurement started.
12:16:18.96	USH	-	-	40	40	Dark measurement started.
12:16:19.03	SWS	-	-	50	50	Dark measurement started.
12:16:19.88	LSH	-	-	40	40	Manual scene recording started.
12:16:20.09	USH	-	-	40	40	Manual scene recording started.
12:16:20.41	SWS	-	-	50	50	Manual scene recording started.
12:16:26.15	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:16:35.86	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:16:45.49	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:16:55.12	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:17:04.85	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:17:14.42	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:17:24.15	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:17:33.71	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:17:43.38	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:17:52.96	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:18:02.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:18:12.13	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:18:21.72	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:18:31.36	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:18:40.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:18:50.54	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:19:00.12	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:19:09.63	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:19:19.21	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:19:28.81	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:19:28.84	---	-	-	-	-	*** error on telescope posistioning appears to
be + 2 deg						
12:19:32.78	SWS	-12.0	-	-	-	Telescope stopped.
12:19:40.43	SWS	-12.0	-	-	-	Telescope sent to 0.000
12:19:40.81	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:19:46.99	---	-	-	-	-	Reset shutters.
12:19:50.72	LSH	-	-	40	40	Dark measurement started.
12:19:50.83	USH	-	-	40	40	Dark measurement started.
12:19:50.92	SWS	-	-	50	50	Dark measurement started.
12:19:51.51	SWS	-	-	50	50	Dark measurement started.
12:19:51.76	LSH	-	-	40	40	Manual scene recording started.
12:19:51.95	USH	-	-	40	40	Manual scene recording started.
12:19:52.57	SWS	-	-	-	-	Idling
12:19:56.23	SWS	-	-	50	50	Dark measurement started.
12:19:56.29	LSH	-	-	40	40	Dark measurement started.
12:19:56.37	USH	-	-	40	40	Dark measurement started.
12:19:57.19	SWS	-	-	-	-	Idling
12:19:57.39	LSH	-	-	40	40	Manual scene recording started.
12:19:57.62	USH	-	-	40	40	Manual scene recording started.
12:19:59.29	SWS	-	-	50	50	Manual scene recording started.
12:19:59.58	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:20:03.64	USH	-	-	40	40	Dark measurement started.
12:20:03.75	LSH	-	-	40	40	Dark measurement started.
12:20:03.75	SWS	-	-	50	50	Dark measurement started.
12:20:04.55	USH	-	-	40	40	Manual scene recording started.
12:20:04.75	LSH	-	-	40	40	Manual scene recording started.
12:20:05.03	SWS	-	-	50	50	Manual scene recording started.
12:20:18.74	---	-	-	-	-	*** no longer saturating
12:20:22.10	USH	-	-	40	40	Dark measurement started.
12:20:22.17	SWS	-	-	50	50	Dark measurement started.
12:20:22.21	LSH	-	-	40	40	Dark measurement started.
12:20:23.05	USH	-	-	40	40	Manual scene recording started.
12:20:23.38	SWS	-	-	50	50	Manual scene recording started.
12:20:23.49	LSH	-	-	40	40	Manual scene recording started.
12:24:09.34	SWS	0.0	-	-	-	Telescope sent to -55.000
12:24:14.02	SWS	-53.9	-	-	-	Telescope at scan limit - going to 55.0
12:24:23.60	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:24:23.87	---	-	-	-	-	*** run 10
12:24:33.33	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0

12:24:42.94	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:24:52.56	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:25:02.18	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:25:11.83	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:25:21.45	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:25:31.00	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:25:40.73	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:25:50.55	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:26:00.06	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:26:09.71	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:26:19.44	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:26:29.03	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:26:38.63	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:26:48.30	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:26:58.02	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:27:07.67	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:27:17.20	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:27:26.77	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:27:36.54	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:27:46.19	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:27:55.84	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:28:05.76	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:28:15.38	SWS	54.8	-	-	-	Telescope at scan limit - going to -55.0
12:28:24.82	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:28:34.69	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:28:44.24	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:28:53.67	SWS	54.5	-	-	-	Telescope at scan limit - going to -55.0
12:29:03.15	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:29:12.94	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:29:22.75	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:29:32.61	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:29:42.18	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:29:51.75	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0
12:30:01.36	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:30:11.07	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:30:20.63	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
12:30:30.28	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:30:40.08	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:30:49.56	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:30:59.19	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:31:08.83	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:31:18.58	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:31:28.29	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:31:37.74	SWS	-54.8	-	-	-	Telescope at scan limit - going to 55.0
12:31:47.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:31:56.73	SWS	-54.0	-	-	-	Telescope at scan limit - going to 55.0
12:32:06.41	SWS	54.1	-	-	-	Telescope at scan limit - going to -55.0
12:32:16.01	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:32:25.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:32:35.32	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:32:44.95	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:32:54.38	SWS	-54.5	-	-	-	Telescope at scan limit - going to 55.0
12:33:04.22	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:33:13.85	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:33:23.27	SWS	54.3	-	-	-	Telescope at scan limit - going to -55.0
12:33:32.85	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:33:42.75	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:33:52.25	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:34:01.83	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:34:11.33	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:34:20.99	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:34:30.82	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:34:40.22	SWS	54.1	-	-	-	Telescope at scan limit - going to -55.0
12:34:49.82	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:34:50.86	---	-	-	-	-	Reset shutters.
12:34:56.83	SWS	-	-	50	50	Dark measurement started.
12:34:56.92	USH	-	-	40	40	Dark measurement started.
12:34:56.94	LSH	-	-	40	40	Dark measurement started.
12:34:57.83	SWS	-	-	50	50	Manual scene recording started.

12:34:58.06	USH	-	-	40	40	Manual scene recording started.
12:34:58.39	LSH	-	-	40	40	Manual scene recording started.
12:34:59.50	LSH	-	-	40	40	Dark measurement started.
12:34:59.56	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:34:59.58	USH	-	-	40	40	Dark measurement started.
12:34:59.59	SWS	-	-	50	50	Dark measurement started.
12:35:00.24	SWS	-	-	50	50	Dark measurement started.
12:35:00.67	LSH	-	-	40	40	Manual scene recording started.
12:35:00.86	USH	-	-	40	40	Manual scene recording started.
12:35:01.30	SWS	-	-	-	-	Idling
12:35:03.15	SWS	-	-	50	50	Manual scene recording started.
12:35:09.24	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:35:18.86	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:35:28.56	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:35:38.20	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:35:47.84	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:35:57.44	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:36:07.19	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:36:16.82	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:36:26.45	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:36:36.05	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:36:45.78	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:36:55.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
12:37:01.39	SWS	-11.1	-	-	-	Telescope stopped.
12:37:10.10	SWS	-11.0	-	-	-	Telescope sent to 0.000
12:37:14.99	---	-	-	-	-	*** profile 11
12:38:07.93	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:38:11.89	---	-	-	-	-	*** saturating
12:38:46.56	---	-	-	-	-	*** clear of saturation now
12:38:56.05	---	-	-	-	-	Reset shutters.
12:38:59.66	USH	-	-	40	40	Dark measurement started.
12:38:59.74	SWS	-	-	50	50	Dark measurement started.
12:38:59.78	LSH	-	-	40	40	Dark measurement started.
12:39:00.58	USH	-	-	40	40	Manual scene recording started.
12:39:00.89	SWS	-	-	50	50	Manual scene recording started.
12:39:01.14	LSH	-	-	40	40	Manual scene recording started.
12:39:02.18	SWS	-	-	50	50	Dark measurement started.
12:39:02.20	USH	-	-	40	40	Dark measurement started.
12:39:02.25	LSH	-	-	40	40	Dark measurement started.
12:39:03.32	SWS	-	-	50	50	Manual scene recording started.
12:39:03.50	USH	-	-	40	40	Manual scene recording started.
12:39:03.73	LSH	-	-	40	40	Manual scene recording started.
12:39:11.35	LSH	-	-	40	40	Dark measurement started.
12:39:11.38	USH	-	-	40	40	Dark measurement started.
12:39:11.44	SWS	-	-	50	50	Dark measurement started.
12:39:12.32	LSH	-	-	40	40	Manual scene recording started.
12:39:12.61	USH	-	-	40	40	Manual scene recording started.
12:39:12.94	SWS	-	-	50	50	Manual scene recording started.
12:39:13.95	LSH	-	-	40	40	Dark measurement started.
12:39:14.07	USH	-	-	40	40	Dark measurement started.
12:39:14.15	SWS	-	-	50	50	Dark measurement started.
12:39:14.83	LSH	-	-	40	40	Manual scene recording started.
12:39:15.06	USH	-	-	40	40	Manual scene recording started.
12:39:15.34	SWS	-	-	50	50	Manual scene recording started.
12:48:20.81	SWS	-	-	-	-	Warning: Clipping may be occurring.
12:48:35.75	---	-	-	-	-	*** saturated
12:48:42.00	---	-	-	-	-	*** now clear again
12:49:02.86	---	-	-	-	-	Reset shutters.
12:49:08.18	LSH	-	-	40	40	Dark measurement started.
12:49:08.24	SWS	-	-	50	50	Dark measurement started.
12:49:08.27	USH	-	-	40	40	Dark measurement started.
12:49:08.70	SWS	-	-	50	50	Dark measurement started.
12:49:09.10	LSH	-	-	40	40	Manual scene recording started.
12:49:09.61	USH	-	-	40	40	Manual scene recording started.
12:49:10.09	SWS	-	-	-	-	Idling
12:49:11.80	SWS	-	-	50	50	Dark measurement started.
12:49:11.89	USH	-	-	40	40	Dark measurement started.
12:49:11.96	LSH	-	-	40	40	Dark measurement started.
12:49:12.91	SWS	-	-	-	-	Idling

12:49:13.00	USH	-	-	40	40	Manual scene recording started.
12:49:13.20	LSH	-	-	40	40	Manual scene recording started.
12:49:13.88	SWS	-	-	50	50	Manual scene recording started.
12:52:44.99	SWS	0.0	-	-	-	Telescope sent to -55.000
12:52:49.76	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:52:59.36	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:53:09.07	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:53:18.65	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:53:26.73	---	-	-	-	-	*** run 11.1
12:53:28.42	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:53:38.20	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:53:47.70	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:53:57.34	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:54:07.05	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:54:16.79	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:54:26.54	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:54:36.14	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:54:45.78	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:54:55.53	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:55:05.10	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:55:14.75	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:55:24.49	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:55:33.99	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:55:43.59	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:55:53.25	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:56:02.89	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:56:12.68	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:56:22.43	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:56:31.95	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:56:41.66	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:56:51.49	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:57:01.23	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:57:10.94	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:57:20.48	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:57:30.24	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:57:40.01	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:57:49.80	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:57:59.55	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:58:09.13	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:58:18.84	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:58:28.45	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:58:38.06	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
12:58:47.67	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:58:57.48	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:59:07.31	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:59:16.93	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:59:26.66	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:59:36.43	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
12:59:46.17	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
12:59:55.83	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:00:05.61	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:00:15.26	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:00:24.89	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:00:34.62	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:00:44.19	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:00:53.91	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:01:03.61	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:01:13.35	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:01:23.10	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:01:32.87	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
13:01:42.67	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:01:52.44	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:02:02.09	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:02:11.89	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
13:02:21.56	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:02:31.32	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:02:41.13	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:02:50.89	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:03:00.46	SWS	54.9	-	-	-	Telescope at scan limit - going to -55.0

13:03:10.11	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
13:03:19.80	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:03:29.53	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:03:39.28	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:03:49.09	SWS	-55.2	-	-	-	Telescope at scan limit - going to 55.0
13:03:52.73	SWS	-15.7	-	-	-	Telescope stopped.
13:04:00.19	SWS	-15.7	-	-	-	Telescope sent to 0.000
13:04:04.45	---	-	-	-	-	Reset shutters.
13:04:08.58	SWS	-	-	50	50	Dark measurement started.
13:04:08.60	USH	-	-	40	40	Dark measurement started.
13:04:08.73	LSH	-	-	40	40	Dark measurement started.
13:04:09.57	SWS	-	-	50	50	Manual scene recording started.
13:04:09.82	USH	-	-	40	40	Manual scene recording started.
13:04:10.23	LSH	-	-	40	40	Manual scene recording started.
13:04:11.36	USH	-	-	40	40	Dark measurement started.
13:04:11.39	SWS	-	-	50	50	Dark measurement started.
13:04:11.42	LSH	-	-	40	40	Dark measurement started.
13:04:12.52	USH	-	-	40	40	Manual scene recording started.
13:04:12.87	SWS	-	-	50	50	Manual scene recording started.
13:04:13.00	LSH	-	-	40	40	Manual scene recording started.
13:04:16.94	USH	-	-	40	40	Dark measurement started.
13:04:17.00	SWS	-	-	50	50	Dark measurement started.
13:04:17.03	LSH	-	-	40	40	Dark measurement started.
13:04:17.64	LSH	-	-	40	40	Dark measurement started.
13:04:17.81	USH	-	-	40	40	Manual scene recording started.
13:04:18.20	SWS	-	-	50	50	Manual scene recording started.
13:04:18.58	LSH	-	-	-	-	Idling
13:04:20.83	LSH	-	-	40	40	Manual scene recording started.
13:05:32.80	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:05:33.01	---	-	-	-	-	*** saturating
13:06:10.41	---	-	-	-	-	*** clear drom saturation
13:06:26.03	---	-	-	-	-	Reset shutters.
13:06:29.90	LSH	-	-	40	40	Dark measurement started.
13:06:29.97	SWS	-	-	50	50	Dark measurement started.
13:06:29.98	USH	-	-	40	40	Dark measurement started.
13:06:30.63	USH	-	-	40	40	Dark measurement started.
13:06:30.92	LSH	-	-	40	40	Manual scene recording started.
13:06:31.21	SWS	-	-	50	50	Manual scene recording started.
13:06:31.53	USH	-	-	-	-	Idling
13:06:33.40	USH	-	-	40	40	Dark measurement started.
13:06:33.51	SWS	-	-	50	50	Dark measurement started.
13:06:33.54	LSH	-	-	40	40	Dark measurement started.
13:06:34.43	USH	-	-	-	-	Idling
13:06:34.66	SWS	-	-	50	50	Manual scene recording started.
13:06:34.78	LSH	-	-	40	40	Manual scene recording started.
13:06:36.37	USH	-	-	40	40	Manual scene recording started.
13:07:47.87	SWS	0.0	-	-	-	Telescope sent to -55.000
13:07:52.81	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:08:01.54	---	-	-	-	-	*** run 11.2
13:08:02.59	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:08:12.31	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:08:22.12	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:08:29.01	SWS	-	-	50	50	Dark measurement started.
13:08:29.95	SWS	-	-	50	50	Manual scene recording started.
13:08:31.91	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:08:32.59	---	-	-	-	-	Reset shutters.
13:08:36.82	SWS	-	-	50	50	Dark measurement started.
13:08:36.83	LSH	-	-	40	40	Dark measurement started.
13:08:36.87	USH	-	-	40	40	Dark measurement started.
13:08:37.89	SWS	-	-	50	50	Manual scene recording started.
13:08:37.97	LSH	-	-	40	40	Manual scene recording started.
13:08:38.23	USH	-	-	40	40	Manual scene recording started.
13:08:39.40	SWS	-	-	50	50	Dark measurement started.
13:08:39.44	USH	-	-	40	40	Dark measurement started.
13:08:39.50	LSH	-	-	40	40	Dark measurement started.
13:08:40.54	SWS	-	-	50	50	Manual scene recording started.
13:08:40.66	USH	-	-	40	40	Manual scene recording started.
13:08:40.86	LSH	-	-	40	40	Manual scene recording started.
13:08:41.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0

13:08:51.17	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:09:00.85	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:09:10.58	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:09:20.20	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:09:29.91	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:09:39.73	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:09:49.51	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:09:59.37	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:10:09.15	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:10:18.89	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:10:28.65	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:10:38.25	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:10:48.00	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:10:57.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:11:07.56	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:11:17.23	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:11:26.92	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:11:36.66	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:11:46.49	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:11:56.13	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:12:05.90	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:12:15.72	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:12:25.45	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:12:35.29	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:12:45.05	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:12:54.85	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:13:04.66	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:13:14.34	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:13:23.60	SWS	-	-	50	50	Dark measurement started.
13:13:23.62	USH	-	-	40	40	Dark measurement started.
13:13:23.68	LSH	-	-	40	40	Dark measurement started.
13:13:24.14	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:13:24.75	SWS	-	-	50	50	Manual scene recording started.
13:13:24.90	USH	-	-	40	40	Manual scene recording started.
13:13:25.11	LSH	-	-	40	40	Manual scene recording started.
13:13:32.53	SWS	-	-	75	-	VIS int.time changed from 50ms to 75ms.
13:13:32.54	SWS	-	-	-	75	NIR int.time changed from 50ms to 75ms.
13:13:33.88	SWS	55.1	-	-	-	Telescope at scan limit - going to -55.0
13:13:35.17	SWS	-	-	75	75	Dark measurement started.
13:13:36.44	SWS	-	-	75	75	Manual scene recording started.
13:13:37.76	SWS	-	-	75	75	Dark measurement started.
13:13:39.04	SWS	-	-	75	75	Manual scene recording started.
13:13:43.75	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:13:53.26	SWS	54.8	-	-	-	Telescope at scan limit - going to -55.0
13:14:02.86	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:14:12.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:14:22.36	SWS	-55.1	-	-	-	Telescope at scan limit - going to 55.0
13:14:31.14	SWS	45.8	-	-	-	Telescope stopped.
13:14:38.65	SWS	45.8	-	-	-	Telescope sent to 0.000
13:14:46.88	---	-	-	-	-	*** turning
13:15:05.16	---	-	-	-	-	*** SZA 33.7
13:15:53.90	SWS	-	-	75	75	Dark measurement started.
13:15:55.23	SWS	-	-	75	75	Manual scene recording started.
13:15:57.70	SWS	-	-	40	-	VIS int.time changed from 75ms to 40ms.
13:15:57.76	SWS	-	-	-	40	NIR int.time changed from 75ms to 40ms.
13:15:59.69	SWS	-	-	40	40	Dark measurement started.
13:16:00.59	SWS	-	-	40	40	Manual scene recording started.
13:16:01.43	SWS	-	-	40	40	Dark measurement started.
13:16:02.34	SWS	-	-	40	40	Manual scene recording started.
13:16:03.05	SWS	-	-	40	40	Dark measurement started.
13:16:04.06	SWS	-	-	40	40	Manual scene recording started.
13:16:06.24	LSH	-	-	-	-	Idling
13:16:06.27	USH	-	-	-	-	Idling
13:16:06.29	SWS	-	-	-	-	Idling
13:16:07.60	USH	-	-	40	40	Manual scene recording started.
13:16:09.11	LSH	-	-	40	40	Manual scene recording started.
13:16:20.21	SWS	-	-	40	40	Manual scene recording started.
13:23:37.76	---	-	-	-	-	Reset shutters.
13:24:01.92	---	-	-	-	-	*** left hand spiral descent

13:25:55.08	SWS	-	-	50	-	VIS int.time changed from 40ms to 50ms.
13:25:55.10	SWS	-	-	-	50	NIR int.time changed from 40ms to 50ms.
13:25:59.60	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.
13:25:59.61	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
13:26:02.77	SWS	-	-	100	100	Dark measurement started.
13:26:04.28	SWS	-	-	100	100	Manual scene recording started.
13:26:06.71	SWS	-	-	100	100	Dark measurement started.
13:26:08.28	SWS	-	-	100	100	Manual scene recording started.
13:27:48.36	---	-	-	-	-	Reset shutters.
13:27:51.67	USH	-	-	40	40	Dark measurement started.
13:27:51.69	SWS	-	-	100	100	Dark measurement started.
13:27:51.81	LSH	-	-	40	40	Dark measurement started.
13:27:52.65	USH	-	-	40	40	Manual scene recording started.
13:27:53.08	LSH	-	-	40	40	Manual scene recording started.
13:27:53.45	SWS	-	-	100	100	Manual scene recording started.
13:27:53.78	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:27:53.93	SWS	-	-	100	100	Dark measurement started.
13:27:53.94	LSH	-	-	40	40	Dark measurement started.
13:27:53.95	USH	-	-	40	40	Dark measurement started.
13:27:55.24	LSH	-	-	40	40	Manual scene recording started.
13:27:55.36	USH	-	-	40	40	Manual scene recording started.
13:27:55.55	SWS	-	-	100	100	Manual scene recording started.
13:27:56.01	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:27:59.50	SWS	-	-	40	-	VIS int.time changed from 100ms to 40ms.
13:27:59.51	SWS	-	-	-	40	NIR int.time changed from 100ms to 40ms.
13:28:00.84	SWS	-	-	40	40	Dark measurement started.
13:28:01.73	SWS	-	-	40	40	Manual scene recording started.
13:28:02.84	SWS	-	-	40	40	Dark measurement started.
13:28:03.81	SWS	-	-	40	40	Manual scene recording started.
13:28:05.35	USH	-	-	40	40	Dark measurement started.
13:28:06.21	USH	-	-	40	40	Manual scene recording started.
13:28:07.65	LSH	-	-	40	40	Dark measurement started.
13:28:08.57	LSH	-	-	40	40	Manual scene recording started.
13:32:31.64	---	-	-	-	-	Reset shutters.
13:32:39.04	USH	-	-	40	40	Dark measurement started.
13:32:39.11	LSH	-	-	40	40	Dark measurement started.
13:32:39.20	SWS	-	-	40	40	Dark measurement started.
13:32:40.07	USH	-	-	40	40	Manual scene recording started.
13:32:40.40	LSH	-	-	40	40	Manual scene recording started.
13:32:40.57	SWS	-	-	40	40	Manual scene recording started.
13:32:41.85	LSH	-	-	40	40	Dark measurement started.
13:32:41.91	SWS	-	-	40	40	Dark measurement started.
13:32:42.02	USH	-	-	40	40	Dark measurement started.
13:32:42.88	LSH	-	-	40	40	Manual scene recording started.
13:32:42.99	SWS	-	-	40	40	Manual scene recording started.
13:32:43.17	USH	-	-	40	40	Manual scene recording started.
13:38:38.44	---	-	-	-	-	Reset shutters.
13:38:43.44	SWS	-	-	40	40	Dark measurement started.
13:38:43.45	USH	-	-	40	40	Dark measurement started.
13:38:43.48	LSH	-	-	40	40	Dark measurement started.
13:38:44.21	LSH	-	-	40	40	Dark measurement started.
13:38:44.34	SWS	-	-	40	40	Manual scene recording started.
13:38:44.59	USH	-	-	40	40	Manual scene recording started.
13:38:45.21	LSH	-	-	-	-	Idling
13:38:46.47	LSH	-	-	40	40	Dark measurement started.
13:38:46.50	USH	-	-	40	40	Dark measurement started.
13:38:46.58	SWS	-	-	40	40	Dark measurement started.
13:38:47.38	LSH	-	-	-	-	Idling
13:38:47.68	USH	-	-	40	40	Manual scene recording started.
13:38:47.91	SWS	-	-	40	40	Manual scene recording started.
13:38:59.64	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
13:39:00.08	SWS	2.1	-	-	-	Telescope sent to -55.000
13:39:04.41	SWS	53.8	-	-	-	Telescope at scan limit - going to -55.0
13:39:05.17	SWS	47.8	-	-	-	Telescope at scan limit - going to -55.0
13:39:05.94	SWS	38.2	-	-	-	Telescope at scan limit - going to -55.0
13:39:06.74	SWS	28.9	-	-	-	Telescope at scan limit - going to -55.0
13:39:07.48	SWS	19.4	-	-	-	Telescope at scan limit - going to -55.0
13:39:08.26	SWS	10.2	-	-	-	Telescope at scan limit - going to -55.0
13:39:09.04	SWS	0.9	-	-	-	Telescope at scan limit - going to -55.0

13:39:10.15	SWS	-11.2	-	-	-	Telescope stopped.
13:39:16.51	SWS	-11.2	-	-	-	Telescope sent to 0.000
13:41:10.65	SWS	0.0	-	-	-	Telescope sent to -55.000
13:41:15.53	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:41:22.24	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:41:25.32	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:41:26.95	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:41:35.04	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:41:44.79	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:41:54.58	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:42:04.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:42:13.99	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:42:23.73	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:42:33.49	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:42:43.31	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:42:52.92	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:42:54.43	LSH	-	-	40	40	Manual scene recording started.
13:42:56.75	---	-	-	-	-	Reset shutters.
13:43:02.78	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:43:03.41	LSH	-	-	40	40	Dark measurement started.
13:43:03.42	SWS	-	-	40	40	Dark measurement started.
13:43:03.60	USH	-	-	40	40	Dark measurement started.
13:43:04.12	USH	-	-	40	40	Dark measurement started.
13:43:04.53	LSH	-	-	40	40	Manual scene recording started.
13:43:04.59	SWS	-	-	40	40	Manual scene recording started.
13:43:05.20	USH	-	-	-	-	Idling
13:43:06.71	USH	-	-	40	40	Dark measurement started.
13:43:06.75	SWS	-	-	40	40	Dark measurement started.
13:43:06.76	LSH	-	-	40	40	Dark measurement started.
13:43:07.86	USH	-	-	-	-	Idling
13:43:07.99	SWS	-	-	40	40	Manual scene recording started.
13:43:08.21	LSH	-	-	40	40	Manual scene recording started.
13:43:08.26	USH	-	-	40	40	Manual scene recording started.
13:43:12.69	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:43:22.47	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:43:32.32	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:43:42.05	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:43:51.44	SWS	-53.7	-	-	-	Telescope at scan limit - going to 55.0
13:44:01.23	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:44:11.00	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:44:20.76	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:44:27.85	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:44:30.60	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:44:40.44	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:44:50.19	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:44:59.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:45:09.62	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:45:13.83	---	-	-	-	-	***
13:45:13.92	---	-	-	-	-	Reset shutters.
13:45:17.64	SWS	-	-	40	40	Dark measurement started.
13:45:17.68	USH	-	-	40	40	Dark measurement started.
13:45:17.72	LSH	-	-	40	40	Dark measurement started.
13:45:18.21	USH	-	-	40	40	Dark measurement started.
13:45:18.35	LSH	-	-	40	40	Dark measurement started.
13:45:18.58	SWS	-	-	40	40	Manual scene recording started.
13:45:19.36	USH	-	-	-	-	Idling
13:45:19.42	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:45:19.68	LSH	-	-	-	-	Idling
13:45:23.45	LSH	-	-	40	40	Dark measurement started.
13:45:23.45	USH	-	-	40	40	Dark measurement started.
13:45:23.56	SWS	-	-	40	40	Dark measurement started.
13:45:24.40	LSH	-	-	-	-	Idling
13:45:24.77	USH	-	-	-	-	Idling
13:45:24.95	SWS	-	-	40	40	Manual scene recording started.
13:45:25.60	USH	-	-	40	40	Manual scene recording started.
13:45:25.61	LSH	-	-	40	40	Manual scene recording started.
13:45:29.29	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:45:39.00	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:45:44.27	---	-	-	-	-	*** run 12

13:45:48.81	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:45:58.43	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:46:07.81	SWS	-54.1	-	-	-	Telescope at scan limit - going to 55.0
13:46:17.60	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:46:27.73	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:46:37.55	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:46:47.46	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:46:57.19	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:47:07.22	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:47:17.01	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:47:26.50	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:47:35.92	SWS	54.6	-	-	-	Telescope at scan limit - going to -55.0
13:47:45.75	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:47:55.24	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:48:04.91	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:48:14.59	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:48:24.14	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:48:33.63	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:48:43.53	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:48:53.20	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:49:03.14	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:49:12.99	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:49:19.18	LSH	-	-	40	40	Dark measurement started.
13:49:19.25	SWS	-	-	40	40	Dark measurement started.
13:49:19.27	USH	-	-	40	40	Dark measurement started.
13:49:20.07	LSH	-	-	40	40	Manual scene recording started.
13:49:20.34	SWS	-	-	40	40	Manual scene recording started.
13:49:20.56	USH	-	-	40	40	Manual scene recording started.
13:49:21.56	LSH	-	-	40	40	Dark measurement started.
13:49:21.64	SWS	-	-	40	40	Dark measurement started.
13:49:21.66	USH	-	-	40	40	Dark measurement started.
13:49:22.51	LSH	-	-	40	40	Manual scene recording started.
13:49:22.73	SWS	-	-	40	40	Manual scene recording started.
13:49:22.84	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:49:22.97	USH	-	-	40	40	Manual scene recording started.
13:49:26.36	SWS	-	-	75	-	VIS int.time changed from 40ms to 75ms.
13:49:26.38	SWS	-	-	-	75	NIR int.time changed from 40ms to 75ms.
13:49:28.50	SWS	-	-	75	75	Dark measurement started.
13:49:29.75	SWS	-	-	75	75	Manual scene recording started.
13:49:32.59	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:49:33.98	LSH	-	-	40	40	Dark measurement started.
13:49:34.04	USH	-	-	40	40	Dark measurement started.
13:49:34.09	SWS	-	-	75	75	Dark measurement started.
13:49:34.49	USH	-	-	40	40	Dark measurement started.
13:49:34.93	LSH	-	-	40	40	Manual scene recording started.
13:49:35.53	USH	-	-	-	-	Idling
13:49:35.69	SWS	-	-	75	75	Manual scene recording started.
13:49:37.07	USH	-	-	40	40	Manual scene recording started.
13:49:42.29	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:49:52.14	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:50:01.90	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:50:11.54	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:50:21.42	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:50:31.25	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:50:41.05	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:50:50.89	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:51:00.86	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:51:10.68	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:51:20.51	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:51:30.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:51:40.08	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:51:49.86	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:51:59.69	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:52:09.58	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:52:19.47	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:52:29.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:52:39.13	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:52:48.93	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:52:58.65	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0

13:53:08.45	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:53:18.20	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:53:28.00	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:53:37.76	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:53:47.55	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:53:57.22	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:54:06.99	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:54:16.86	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:54:26.69	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:54:36.59	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:54:46.49	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:54:56.26	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:55:06.25	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:55:16.00	SWS	-55.0	-	-	-	Telescope at scan limit - going to 55.0
13:55:25.78	SWS	55.0	-	-	-	Telescope at scan limit - going to -55.0
13:55:35.58	SWS	-55.0	-	-	-	Telescope at scan limit - going to 45.0
13:55:44.13	SWS	44.1	-	-	-	Telescope at scan limit - going to -45.0
13:55:52.01	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:56:00.04	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:56:08.03	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:56:16.03	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:56:24.01	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:56:31.97	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:56:40.10	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:56:48.12	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:56:56.05	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:57:03.98	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:57:11.93	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:57:19.96	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:57:27.99	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:57:36.04	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:57:44.13	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:57:52.46	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:58:00.73	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:58:09.01	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:58:17.06	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:58:25.00	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:58:33.00	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
13:58:41.33	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
13:58:46.64	SWS	-14.5	-	-	-	Telescope stopped.
13:58:53.51	SWS	-14.5	-	-	-	Telescope sent to 0.000